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THE
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FOR OCTOBER 1851.

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THE following works have been received:—

General Index to the first thirty-three volumes of the Medico-Chirurgical Transactions. Published by the Royal Medical and Chirurgical Society of London. London: Longman & Co., 1851. (From the Society.)

Journal of the Ethnological Society of London, vol. ii. 1850. (From the Society.)

Guy's Hospital Reports, Second Series, vol. vii. Part I. London, 1850.

Phthisis and the Stethoscope. A concise Practical Guide to the Physical Diagnosis of Consumption. By RICHARD PAYNE COTTON, M. D., M. R. C. P. L. London: John Churchill, 1851. (From the Author.)

Transactions of the Medical Society of the State of New York, during its annual session held at Albany, February 4th, 1851. Albany: Charles Van Benthuyzen, 1851. (From the Society.)

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from November 5th, 1850, to January 6th, 1851, inclusive. (From the College.)

Urinary Deposits: their Diagnosis, Pathology, and Therapeutical Indications. By GOLDING BIRD, M. D., &c., &c., &c. Second American, from the third revised and enlarged London edition. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

Letters to a Candid Inquirer, on Animal Magnetism. By WM. GREGORY, M. D., F. R. S. E. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

The Pharmacopœia of the United States of America. By authority of the National Medical Convention, held at Washington, A. D., 1850. Philadelphia: Lippincott, Grambo & Co., 1851. (From the Publishers.)

A Practical Treatise on the Diseases and Injuries of the Urinary Bladder, the Prostate Gland, and the Urethra. By S. D. GROSS, M. D., Prof. of Surgery in the University of Louisville, &c. &c. With 106 illustrations. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

Minor Surgery, or Hints on the Every Day Duties of the Surgeon. By HENRY H. SMITH, M. D., Assistant Lecturer on Clinical Surgery in the University of Pennsylvania; one of the Surgeons to the St. Joseph's Hospital; Lecturer on the Principles and Practice of Surgery in the Philadelphia Medical Institute, etc. Third edition, with numerous additions. Illustrated by 247 engravings. Philadelphia: Edmond Barrington & George D. Haswell, 1850. (From the Publishers.)

The Physician's Prescription Book: containing list of terms, phrases, contractions, and abbreviations used in prescriptions, with explanatory notes; also the grammatical construction of prescriptions, &c., &c. To which is added a Key containing the prescriptions in an unabbreviated form, with a literal translation, intended for the use of Medical and Pharmaceutical Students. First American, from the tenth London edition. Philadelphia: Lindsay & Blakiston, 1851. (From the Publishers.)

Bulwer and Forbes on the Water Treatment. A compilation of papers on the subjects of Hygiene and Rational Hydropathy. Edited, with additional matters, by ROLAND S. HOUGHTON, A. M., M. D. New and revised edition, stereotyped; with additions and improvements. New York: Fowler & Wells, Publishers, 1851. (From the Publishers.)

Lectures on the Eruptive Fevers; as now in the course of delivery at St. Thomas's Hospital, in London. By GEORGE GREGORY, M. D., Fellow of the Royal College of Physicians of London; Physician to the Small Pox and Vaccination Hospital at Highgate; Corresponding Member of the National Institute of Washington, etc. First American edition, with numerous additions and amendments by the Author, comprising his latest views. With notes and an appendix, embodying the most recent opinions on Enthematic Pathology; and also statistical tables and coloured plates, by H. D. BULKLEY, M. D., Physician of the New York Hospital; Fellow of the New York College of Physicians and Surgeons, etc., etc. New York: S. S. & W. Wood, 1851. (From the Publishers.)

Intermarriages; or the Modes in which, and the Causes why, Beauty, Health, and Intellect result from certain Unions, and Deformity, Disease, and Insanity, from others, demonstrated by Delineations of the Structures and Forms, and Descriptions of the Functions and Capacities which each Parent in every pair bestows on Children, in conformity with certain Natural Laws, and by an account of corresponding effects in the Breeding of Animals. With eight illustrative drawings. By ALEXANDER WALKER. Philadelphia: Lindsay & Blakiston, 1851. (From the Publishers.)

Proceedings of the Medical Association of the State of Alabama, begun and held in the city of Mobile, December 10–14, 1850. With an Appendix. Mobile, 1851.

Report of a Committee appointed by the Academy of Medicine, upon the Comparative Value of Milk, formed from the slop of Distilleries and other Food, with Chemical and Microscopical Analyses. By AUGUSTUS K. GARDNER, M. D., Chairman. Read March 1st, 1848. New York, 1851. (From the Author.)

The Present Tendency of Investigation in Medicine. An Address delivered before the Suffolk District Medical Society, at its Second Anniversary Meeting, Boston, March 28th, 1851. By SAMUEL PARKMAN, M. D., M. M. S. S., one of the Surgeons of the Mass. Gen. Hospital. Published by request of the Society. Boston, 1851. (From the Author.)

An Address, delivered before the Graduating Class of the Medical College of Georgia, March 1851. By CHARLES TODD QUINTARD, M. D. of Boswell. Published by the Faculty. Augusta, Geo., 1851.

Eighth Annual Report of the Managers of the State Lunatic Asylum of the State of New York, made to the Legislature February 27th, 1851. Albany, 1851.

By-Laws of the Pennsylvania State Lunatic Asylum at Harrisburg, with the Acts of the Legislature establishing the same. Harrisburg, 1851. (From Dr. Curwen.)

Thirty-Fourth Annual Report on the State of the Asylum for the Relief of Persons deprived of the Use of their Reason. Philadelphia, 1851.

Essays on Asylums for Persons of Unsound Mind. By JOHN M. GALT, M. D. Richmond, 1850.

Cases of Vesico-Vaginal Fistula treated by Operation. By GEO. HAYWARD, M. D. (From the "Boston Med. and Surg. Journ.") Boston, 1851. (From the Author.)

A Contribution to the Statistics of Rupture of the Urinary Bladder, with a table of seventy-eight cases. By STEPHEN SMITH, M. D., Assistant Surgeon to Bellevue Hospital, New York. (New York, 1851.)

Charge to the Graduates of Jefferson Medical College of Philadelphia, delivered March 8th, 1851. By Prof. T. D. MUTTER. Philadelphia, 1851. (From the Author.)

An Address to the Graduates of the Medical Department of the St. Louis University. Delivered Feb. 28th, 1851. By A. LITTON, M. D. Prof. of Chem. and Pharm. St. Louis, 1851. (From the Author.)

Address to the Graduates of Washington University of Baltimore. By THOS. E. BOND, M. D. Baltimore, 1851.

Medical Commencement of the University of Pennsylvania, held on Saturday, April 5th, 1851, with the Valedictory. By W. E. HORNER, M. D., Prof. of Anat. Second edition. Philadelphia, 1851. (From Dr. Horner.)

Comparative Intellectual Standing of the Medical Profession. An Introductory Address. By E. R. PEASLEE, A. M., M. D., Prof. Anat. and Surg. in the Medical School of Maine. Session of 1851. Concord, 1851.

Catalogue of the Officers and Students of Starling Medical College for the Session of 1850–51. Columbus, 1851.

Catalogue of the Officers and Students of the Western Reserve College, 1850–51. Hudson, O. 1851.

Catalogues of the Trustees, Faculty, and Students of the Medical College of the State of South Carolina. Session of 1850–51. Charleston, 1851.

The Annual Announcement of the Medical Department of the University of the State of Missouri. Session of 1850–51–52. St. Louis, 1851.

The following Journals have been received in exchange:—

Gazette Médicale de Paris, November, December, 1850. January, February, 1851.

Revue Médicale Française et Etrangère. Par J. B. CAYOL, D. M. P., &c. &c. Oct., Nov., Dec., 1850.

Annales Médico-Psychologiques. Journal destiné à recueiller tous les documents relatifs à l'aliénation mentale, aux névroses, et à la Médecine Légale des aliénés. Par MM. les Docteurs BAILLARGER, BRIERRE DE BOISMONT, et CERISE. Jan. 1851.

Journal des Connaissances Médico-Chirurgicales. Publié par le Dr. A. MARTIN LAUZER. Nov., Dec., 1850. Jan., Feb., 1851.

Journal des Connaissances Médicales Pratiques et de Pharmacologie. Oct., Nov., Dec. 1851.

Zeitschrift für die gesammte Medicin. Herausgegeben. Von F. W. Oppenheim. May, June, July, Aug. 1850.

The Edinburgh Medical and Surgical Journal. April, 1851.

The British and Foreign Medico-Chirurgical Review. April, 1851.

The London Medical Gazette. March, April, May, 1851.

Monthly Journal of Medical Science. April, May, June, 1851.

London Journal of Medicine. April, May, June, 1851.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. April, 1851.

The Dublin Quarterly Journal of Medical Science. May, 1851.

The Medical Times. March, April, May, 1851.

Provincial Medical and Surgical Journal. Edited by W. H. Ranking, M. D., and J. H. Walsh, Esq. March, April, May, 1851.

British American Medical and Physical Journal. Edited by Archibald Hall, M. D. April, May, 1851.

The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica. April, 1851.

The Western Lancet. Edited by Drs. L. M. Lawson and Geo. Mendenhall. April, May, June, 1851.

Southern Medical and Surgical Journal. Edited by L. A. Dugas, M. D. April, May, June, 1851.

Buffalo Medical Journal. Edited by Austin Flint, M. D. April, May, June, 1851.

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by Joseph Parrish, M. D., Burlington. April, May, June, 1851.

Nashville Journal of Medicine and Surgery. Edited by W. K. Bowling, M. D. Feb., April, 1851.

The American Journal of Dental Science. Edited by Chapin A. Harris, M. D., D. D. S., and Alfred A. Blandy, M. D., D. D. S. April, 1851.

The New Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences. A. Hester, M. D., Editor and Proprietor. May, 1851.

The Charleston Medical Journal and Review. Edited by D. J. Cain, M. D., and F. Peyre Porcher, M. D. May, 1851.

The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. Purple, M. D. May, 1851.

The North Western Medical and Surgical Journal. Edited by Drs. J. Evans, and E. G. Meek. March, 1851.

The North Western Medical Intelligencer. April, May, 1851.

Northern Lancet and Gazette of Legal Medicine. Edited by Horace Nelson, M. D., and F. J. D'Avignon, M. D. April, May, June, 1851.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by Wm. Procter, Jr., Professor of Pharmacy. April, 1851.

The New York Register of Medicine and Pharmacy. Edited by C. D. Griswold, M. D. April, May, June, 1851.

Boston Medical and Surgical Journal. Edited by J. V. C. Smith, M. D. April, May, June, 1851.

The Medical Examiner. Edited by F. G. Smith, M. D., and J. B. Biddle, M. D. April, May, 1851.

The Western Medico-Chirurgical Journal. Edited by J. F. Sanford, M. D., and S. G. Armor, M. D. April, May, 1851.

The Stethoscope and Virginia Medical Gazette. Edited by P. C. Gooch, M. D. April, May, June, 1851.

St. Louis Medical and Surgical Journal. Edited by Drs. Linton, Moore, M'Pheeters, and Johnson. April, June, 1851.

The American Journal of Science and the Arts. Conducted by B. Silliman, B. Silliman, Jr., and Jas. D. Dana, and W. Gibbs. May, 1851.

Transylvania Medical Journal. Edited by E. L. Dudley, M. D., and H. M. Bullitt, M. D. April, June, 1851.

The Ohio Medical and Surgical Journal. Edited by R. L. Howard, M. D. May, 1851.

The Western Journal of Medicine and Surgery. Edited by Dr. L. P. Yandell, and T. S. Bell. April, June.

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XV. Essays and Notes on the Physiology and Diseases of Women, and on Practical Midwifery. By John Roberton, formerly Senior Surgeon in Ordinary to the Manchester and Salford Lying-in Hospital and Dispensary for the Diseases of Women and Children. London, 1851: 8vo. pp. 530. - - - - - - - - - - - - 179
XVI. Cases of Vesico-Vaginal Fistula, treated by Operation. By Geo. Hayward, M. D. (From "Boston Med. and Surg. Journ.") Boston, 1851: 8vo. pp. 21. - - - - - - - - - - - - 196
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ART. I.—*Three Cases of Occlusion of the Vagina, accompanied by Retention of the Catamenia, relieved by an Operation.* By J. MASON WARREN, M.D. (Communicated to the Boston Society for Medical Improvement.) With a wood-cut.

THE cases of occlusion of the vagina, successfully relieved by an operation, are rare, and the mode to be pursued under the different circumstances in which this occurrence presents itself has not been very fully pointed out by writers on the subject. In the first of the following cases, some embarrassment was therefore felt as to the proper course to be adopted.

The principal authorities for reference were Boyer, Boivin, Amussat, and the case of Professor Mussey. The former of these details two or three very interesting cases as showing the anatomical peculiarities which are likely to exist, but advises against the operation in nearly these words: "An opening into the bladder and rectum is not the only accident to be dreaded in this operation. Inflammation of the womb and of the neighbouring parts has to my certain knowledge caused the death of two females, on whom it had been performed." Madame Boivin, after observing that in these cases of atresia the prognosis is worse, the diagnosis more difficult, the treatment more uncertain, and the operations more doubtful and delicate than in cases of simple closure, recounts the three instances recorded by Boyer, in one of which the celebrated Dubois was called in consultation. The result of these cases was, however, fatal, as also that of another, in which an eminent surgeon unfolded, as it were, the urethro-rectal septum, punctured the tumour, and thus gave issue to the retained fluid, for the first few days with the prospect of success. The case of Amussat is very instructive, and detailed at considerable length in the number of this Journal for Feb. 1837. In many respects it corresponds with one of our own cases hereafter given, and was operated upon with perfect success. The case of Professor Mussey is also detailed in Vol. XXI. of the same Journal; and in the number for July, 1850, another, with the appearances upon a post-mortem examination, is described by Dr. J. B. S. Jackson. "In regard to an operation," he says, "which seemed to have been so imperatively required, a consultation was held with two or three professed surgeons when the occlusion was discovered, but the opinions were against it."

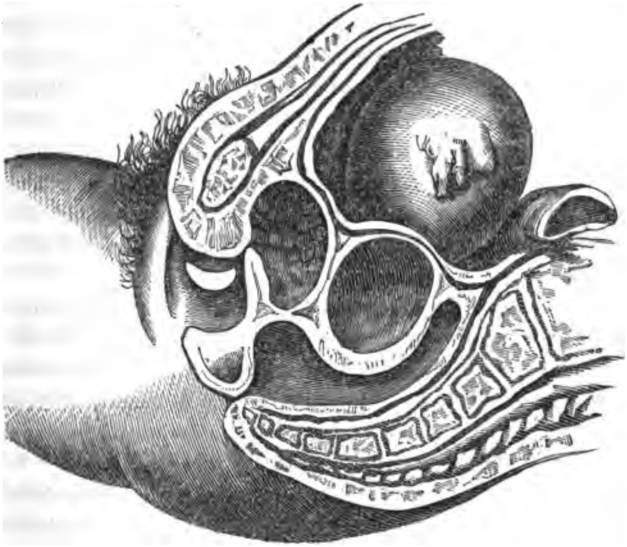
Some writers on surgery, Chelius, for instance, have given general directions for the management of closure of the vagina, whether from accident or congenital malformation. But sufficient detail is wanting as to the diagnosis in retention of the menstrual secretion, and the mode of giving an external outlet when the anatomical relations of the parts have been altered by inflammation or extensive gangrene. These considerations have led me to offer the following cases, with the hope that they may be of service to any surgeon who should meet with similar instances in the course of his practice. In the first two, it will be seen that the occlusion was the result of parturition; in the last it was congenital.

Case I.—This patient was a married woman, twenty years of age. A year before, she had been delivered, by means of instruments, of a dead child, after a labour of four days; very severe inflammation followed, attended with sloughing of a portion of the vesico-vaginal septum, so that the remains of the bladder, falling down, became adherent to the posterior wall of the vagina, and obliterated the passage. The urethra also in part sloughed, the water escaping at a valvular opening between the remains of the neck of the bladder and the os pubis.

The menstrual secretion had been retained from the period of her confinement; at first she suffered at the regular periodical returns of the catamenia from pain and distension of the abdomen, with a sense of bearing down in the rectum. Latterly, the pain has become almost constant, at times amounting to a feeling as if the abdomen would give way, and so acute as only to be relieved by the persistence in large doses of narcotic substances. From these causes she was almost bedridden, and reduced to the lowest degree of emaciation.

The constant dribbling of urine had rendered the orifice of the vagina so extremely sensitive that it was found quite impracticable to make any examination until the patient had been placed under the influence of ether. The cul-de-sac left at the commencement of the vagina was just sufficient to admit the end of the forefinger. From its upper part the urine escaped through a valvular opening, so disposed that a probe could not be made to enter the bladder. On passing the forefinger into the rectum, a hard and slightly elastic tumour could be felt about two inches from the external orifice, pressing backwards and partially obstructing the bowel. The other hand being placed on the abdomen distinguished a large globular mass rising above the brim of the pelvis, pressure on which communicated a distinct impulse to the finger in the rectum.

The above examination led to the conclusion that the tumour felt in the abdomen and rectum was the uterus and upper part of the vagina distended by the menstrual fluid. The question next arose how was this tumour to be attacked; the most feasible plan seemed to be to puncture it by the rectum. The impossibility of keeping a passage open in this direction was an objection to this course as affording only a temporary relief. An attempt to dissect the bladder from the vagina, supposing its posterior wall destroyed, and the relation of these organs to be as in the accompanying illustration by Dr. Dalton, would almost inevitably create an opening into its cavity.



In consultation with Dr. Morrill Wyman, the physician of the patient, the plan which was afterwards put in execution was agreed upon, and in the operation, which was performed April 11th, 1850, I was assisted by Dr. Wyman, Dr. S. D. Townsend, and Dr. C. G. Adams.

The patient being brought as completely as possible under the anæsthetic influence of sulphuric ether, was placed on the edge of the bed, with the limbs supported, as in the operation for lithotomy, and the labia held apart by silver hooks. The forefinger being now placed in the rectum to serve as a guide, a transverse incision was made across the lower part of the vagina through its parietes, so as to expose the cellular membrane lying between it and the rectum. This dissection, passing under that portion of the vagina which served as a fundus to the bladder, was continued upwards between these organs for two or three inches until the distended cul-de-sac could be distinctly felt.

A very large trocar and canula was now plunged into the tumour, and when withdrawn a quantity of thick tarry-looking fluid began very slowly to flow through the tube; about a pint was allowed to escape, when the canula was withdrawn, being too short to be left with safety, and a female catheter introduced in its place.

In the afternoon of the day of the operation, the patient was comfortable, and greatly relieved from the previous distressing sense of distension. At intervals, however, there were severe contractile pains in the uterus like those attending the first stages of parturition, and by them the catamenial fluid was forcibly expelled. Spirituous applications were made to the back, and an opiate administered, by which her sufferings were temporarily relieved.

On the following day I learned that she had passed an uneasy night, the pains continuing at intervals, causing a free evacuation of fluid. Her mother estimated that at least two quarts had passed through the instrument, with the effect of greatly diminishing the tension of the abdomen. Towards evening she had an access of pain and fever, with some obstruction to the discharge; the bowels being constipated, she was ordered a cathartic of castor oil. On the thirteenth, the report was that the medicine had operated with much relief, and the uterus had again resumed its action. This organ could now be felt above the pubes, somewhat tender on pressure, and contracted into a small, well-defined tumour.

For about a week she improved steadily, the discharge continuing at intervals. It was with the utmost difficulty that any instrument could be retained in the opening, and when displaced, as it was once or twice by her restlessness, the aperture was found to have so contracted as to render its replacement almost impracticable; especially as her complaints were very great from the excessive sensibility of the external organs.

After the lapse of this period, she was attacked with a catarrhal affection, during which, from some exposure or error in diet, she was suddenly seized with violent pains in the abdomen, meteorism, great sensibility on pressure, with other symptoms denoting peritoneal inflammation. These were gradually relieved by treatment, the patient barely escaping with her life. During this attack the canula had necessarily been removed, and every measure for maintaining the opening abandoned. It was therefore a subject of interesting speculation whether, at the next catamenial period, the aperture would be pervious, and also if the uterus after so great distension would resume its normal functions. To the great satisfaction both of the patient and myself, the menstrual secretion came on naturally about four weeks from the date of the operation, and gained an exit without difficulty.

The subsequent improvement was gradual, and only interrupted in the course of the summer by an attack of varioloid, which disease prevailed in the house.

I have recently heard from this lady through her mother, who informs me that from a mere skeleton her daughter has become quite fleshy; she has regained her health and strength so as to be able to use exercise on horseback, and that the menstrual secretion is natural at the regular periods.

CASE II.—On February 4th, 1850, I was applied to by Mrs. B., aged thirty, in consequence of the suffering produced by the retention of the menstrual fluid from an occlusion of the vagina subsequent to parturition.

In the August previous, she had been delivered of her first child after a labour of four days, during a portion of which the head of the infant remained in the pelvis. Instruments were used but ineffectually, and the delivery was ultimately accomplished without them; very severe inflammatory symptoms attended, while a purulent discharge followed, and finally it was discovered that the vagina had become entirely obliterated. From that time the return of every catamenial period has been marked by the most distressing pains in the back and abdomen, lasting three or four days, and progressively increasing in violence; this was accompanied with some constitutional disturbance, and these repeated attacks have gradually impaired her health.

An examination showed that the vagina was entirely closed, and hardly a perceptible cicatrix could be detected to indicate the line of union. At the lower part of the vulva an orifice was discovered large enough to admit a probe, which on being introduced could be passed up a distance of three inches in the direction of the uterus, and was distinctly perceived through the recto-vaginal parietes by the finger introduced into the rectum. At this period no abdominal or rectal tumor was ascertained to exist. It was determined to etherize her, and attempt to restore the vaginal passage.

After having brought the patient fully under the influence of the anæsthetic agent, a bougie was passed into the fistulous opening. This was followed by the finger, and by proceeding carefully in this way, by distending and separating the adherent parts, a free opening was made of about three and a half or four inches. At this point a regular organized septum precluded any advance, unless by the assistance of cutting instruments. A bit of sponge was therefore introduced and directed to be kept in situ during the night.

On the day following, the sponge was removed and replaced by another piece. This course was continued for a week, when no tumour being discovered in the rectum to indicate the situation of the distended uterus, and there being no trace of the os uteri in the vagina, it was determined to suspend any further proceedings, resting contented with what had been gained, and enjoining upon her to use all necessary means for keeping the passage open until the distension caused by the menstrual secretion should be sufficient to serve as a guide to the knife.

A few months after, having rigorously followed up the above directions, she visited me a second time, suffering in the same way as before, and urgently demanding relief. An examination elicited no change in the situation of the parts. As the pain was very distressing, however, I consented to make an incision at the upper part of the vagina, with the hope of throwing some light upon the direction in which the enlargement of the uterus was taking place. This was done, and the dissection carried as far as was thought safe, but with no good result.

On the 3d of May, I again saw her; she had for four days been in extreme pain. The vagina, so far as it had been dilated, I found to be of its natural dimensions. The finger introduced into the rectum at once discovered, about two inches from the anus, a hard tumour, such as might be presented by the enlarged prostate in the male, and with as little sensation of fluctuation. She informed me that for the previous twenty-four hours there had been a bloody discharge from the vagina, and traces of this secretion were perceived when that passage was examined, apparently coming from the mucous membrane. Not the slightest indication of any tumour could be found in this direction, even when the abdomen was strongly pressed upon.

Although the rectal tumour was free from fluctuation, I had no question from my previous experience but that it proceeded from an enlargement by distension with fluid of the upper part of the vagina or uterus, and therefore proposed an operation, which was readily acceded to.

On the 3d of July, the operation was performed, with the assistance of Dr. Channing, the patient being first etherized. The upper and back part of the vagina was cut freely through with a round-bladed bistoury, and very soon with a slight dissection the tumour which had been felt by the rectum presented itself, but much softer and more elastic than when examined through the intestinal wall. A large trocar was now plunged into it in a direction obliquely backward, in order to avoid wounding the os uteri, in case that organ projected into the vagina. A free discharge of the black tarry substance described in the last case at once took place.

About half a pint of fluid having escaped, the canula was withdrawn, and the finger introduced into the opening, which was enlarged in either direction with the probe-pointed bistoury.

On exploring the cavity, no distinct projection answering to the os uteri could be discovered. The whole interior both of the uterus and vagina seemed to form but a single receptacle, a little contracted at one point, like the hour-glass contraction of the uterus, and this apparently answering to the situation of the os tincæ. The mucous membrane appeared much swollen and traversed by large vessels, which stood out in bold relief. A long narrow bit of sponge was passed into the vagina, half of it being allowed to remain within and half without the opening just made. The patient declared herself at once relieved from all her distressing symptoms.

From the difficulty of maintaining the new opening, it was found necessary a few days after the operation to introduce a sponge tent, which was removed daily and replaced by a larger piece. At the end of a week, the patient having exposed herself by going out of doors and washing her person with cold water, immediately after the sponge had been removed, was seized with severe pains in the abdomen and in the lower part of the back, tympanites and all the symptoms denoting inflammation. The treatment consisted in the application of leeches, the administration of purgatives, etc. In three or four days the pain and tenderness gradually concentrated at the lower and left side of the abdomen, where a large hard tumour could be perceived through the parietes. These symptoms were suddenly relieved by the discharge of a quantity of pus from the vagina. The tumour in the abdomen now gradually subsided. The intestinal canal remained for a length of time quite irritable, diarrhœa being produced whenever she took solid food.

She left town on July 31st, quite weak, but recovered.

She was advised to have a small rectum bougie passed into the opening in the vagina daily, as the disposition to contraction was still great, and it was thought unsafe, through fear of exciting a fresh attack of inflammation, to maintain any substance constantly in the aperture.

CASE III.—*Congenital Occlusion.*—Miss S., seventeen years old, has been suffering for two years with a sense of distension and weight in the lower part of the abdomen and back, attended by a forcible pressure in the vagina, as if for the purpose of expelling some foreign substance. She has also been greatly annoyed with a frequent desire to micturate, and of late has passed water as often as every twenty minutes through the day, but with diminished frequency at night. She suffers much severe pain at the extremity of the urethra, which is aggravated by the passage of the water. She has never menstruated.

Her physician, a person of much intelligence, when applied to at once suspected the cause, and on making an examination discovered that the vagina was completely imperforate. I saw her on the next day and found the following appearances. On separating the external labia no traces of the vagina were visible. At the central part of the fossa, usually occupied by this outlet, the meatus urinarius was perceived surrounded by small vegetations, which on the slightest touch elicited the most violent resistance and cries from the patient. A probe being introduced into the urethra, its farther progress was resisted at the distance of an inch from the orifice; but finally, by passing it upwards in almost a vertical direction, it entered the bladder, which was contracted to the smallest dimensions.

The finger was now introduced into the rectum, and at once detected a hard tumour two inches from the anus, pressing backwards against the spine. It seemed quite solid, and without the slightest indications of elasticity. On passing the hand over the abdomen at its lower part, a hard projection was felt in the centre just above the pubis, having a prolongation about four inches in length, extending into the right iliac region. Pressure on either of these swellings caused a movement of the tumour in the rectum, and was attended with much suffering.

No doubt remained in my mind that these tumours were caused by a retention of the menstrual fluid in the uterus and upper part of the vagina, and also the Fallopian tubes, as in the case already referred to, recorded by Dr. J.

B. S. Jackson, in the *American Journal of the Medical Sciences*, July, 1850. An operation was therefore at once advised, which was performed on the following day, with the assistance of her physician, Dr. Tyler, Dr. Channing, and Dr. Storer.

The patient being fully etherized with chloric ether, an incision was made transversely across the mucous membrane of the lower part of the vagina. This disclosed muscular fibres, which being carefully divided through the aperture thus made, a delicate membrane of a dark colour protruded. It was suggested by one of the gentlemen present that this might possibly be the peritoneum, which in a case of malformation and non-existence of the vagina might take an abnormal direction. For the purpose of testing this, I attempted to separate it from the surrounding textures, knowing the loose character of the cellular tissue which attaches the peritoneum to the neighbouring organs and the pelvis. This was at once found to be impracticable, and on a renewal of the effort the resisting part yielded, and the finger passed through into what appeared at first to be the abdominal cavity, so well defined was the anatomy of the walls of the pelvis. The absence of intestines, and the appearance of a small quantity of dark-coloured fluid by the side of the finger, soon made it evident that the vagina had been opened. The size of the cavity occupying the entire pelvis, and the complete absence of os uteri or other boundary, between the uterus and vagina, was on examination sufficiently evident to all present.

By the aid of slight pressure on the abdomen, about half a pint of thick, tenacious fluid escaped. As the uterus did not at once take on contractions, no further efforts were made to evacuate the fluid, but a bit of sponge was introduced into the opening to prevent the parietes from adhering. The vegetations at the orifice of the urethra were now removed by the scissors, and the base of the tumours cauterized with nitrate of silver. To show the extreme sensibility of these tumours, it may be observed that as soon as they were interfered with the patient, although well etherized and perfectly passive through all the previous operation, immediately drew back as if in extreme pain.

At 7 P. M. she was in good spirits, and expressed herself entirely relieved by the operation. The effects of the ether had passed off, notwithstanding she had been kept for three-quarters of an hour fully under its influence. I warned her as to the great danger she incurred from any irregularity in diet or exposure to cold, as I found her disposed to leave her bed, and she was demanding food.

On the 14th September, the day following the operation, she was reported to have passed a good night. The sponge was removed from the vagina, and a free discharge of the peculiar fluid took place; after a few hours it was again introduced. No urine had been passed since the operation; during the succeeding night, however, a copious evacuation of the bladder took place.

On the 17th, she still continued to improve, and the tumour of the abdomen to diminish. The finger passed into the vagina could distinguish the os uteri, as it were, gradually forming itself. It was about the size of a tumbler, with thick edges, and covered with dilated blood-vessels. The sponge tent when withdrawn was very offensive.

As she was urgent to go among her friends, I agreed to-day, the 20th, that she should do so; being conveyed to the rail-road in a carriage with care, and kept in a recumbent position until she arrived at the point of her destination. She was then to remain a few weeks longer in bed, or on a sofa, without attempting to use any exercise. At the period of leaving town, she was quite well. The urine was passed naturally and without pain, the sensitive tumours of the urethra having been destroyed by the operation. The discharge from the vagina had partially ceased or had been replaced by a serous exudation. Her appetite and the state of her digestive organs were natural.

On the 4th of October, the physician of this patient wrote to me as follows: "A case could not proceed more satisfactorily or more rapidly than that of Miss S. She has not had a bad or even a troublesome symptom. I could not conveniently use the dilater which you sent, but substituted a glass female syringe, which she was able to wear during the whole day, the discharge passing off through the calibre. She was able to use without pain one of seven-eighths of an inch in diameter. The discharge has ceased, and she yesterday went to her home."

In the first of the cases which have been given, the only apparently feasible way of arriving at the distended uterus was adopted, viz: that of penetrating to it by a dissection carried up between the rectum and vagina. The proceeding eventuated more satisfactorily than could have been expected. The greatest obstacle to a rapid recovery was the almost impossibility of maintaining the new opening, on account of the great disposition to contraction, and this was found to be true in all the cases. What appeared to be a large free opening, with no restriction on any side but the bones of the pelvis, in the course of a few days was contracted to a firm unyielding ring, into which it was with difficulty that a small bougie could be introduced. The sponge tent, when it could be borne, at once dilated the aperture again to a size as great as could be wished; but the extreme sensitiveness of the parts prohibited, in the case under consideration, a resort to this powerful agent. In fact, it was finally found necessary, on account of the great resistance made by the patient, to desist entirely from all applications, and leave the course of it to nature. The subsequent month, the catamenia appeared slightly, and there has as yet, so far as I know, been no obstruction to it.

In the second case, the obliteration of the vagina, which was closed throughout nearly its whole extent from the upper part to the vulva, was also caused by laborious parturition.

It may serve as an example to show the necessity of making inquiries, after a severe case of labour, as to the degree of local inflammation, and of taking measures for preventing if possible such adhesion as occurred in the present instance, a matter of difficulty and delicacy; but as so much is at stake, these considerations must necessarily give way to a correct appreciation of the danger which would ensue from neglecting an examination, when the discharge from the vagina was so offensive as to suggest the possibility of gangrene and subsequent adhesive inflammation.

It may not be useless to call attention to the great resistance, and in two of the cases entire want of fluctuation, which existed in the distended sac formed by the uterus and vagina, as felt through the rectum, and which might lead the surgeon to doubt the accuracy of his diagnosis, did not other marks assist in forming it.

BOSTON, *Feb.*, 1851.

ART. II.—*Tissue, and its Retrograde Metamorphosis.*—By W. J. BURNETT, M. D., of Boston, Mass.

IF we commence at the first appearance of an individual organization, the ovum, we shall find that in its primitive condition, when examined by the microscope, it will appear to be composed of granules, and when examined chemically, that these same granules are only oil and albumen combined. These so-called granules are not properly such, for they are not solid particles, but utricles, or little albuminous sacs filled with oil.

From these primordial utricles are developed the vitelline cells, and the germinative vesicle and its contents, which, after being vitalized by impregnation, undergo a series of metamorphotic changes, ending in the production of the individual being, with its various tissues.

Two facts are here to be recognized; first, that oil and albumen, thus vitally combined, form the basis of all animal tissues; and, second, that these utricles are the parents as it were of all organized forms. Moreover, they constitute the first material expression of the union of formative power with matter; and, although identical as to their physical characteristics, according to the best microscopic evidence, yet they contain those heterogeneous forces which have their complete expression in the many and different tissues in which their existence is lost and ends.

Those utricles, for instance, which end in the formation of muscle, and cannot, as such, be distinguished from those producing glandular or any other tissue, each preserve faithfully to the end their distinctions, embodying in their minute forms the ideas, as it were, of the future form and conditions of life.

Reverting then to our simplest idea of tissue, it is this elementary form, an utricle, vitalized albumen combined with animal oil.

Now, in the elimination of tissue in its compound form, that is, capable of a function, these utricles serve either a direct or an indirect agency. They enter directly into and form the lower fibrillated tissues, or they serve as a kind of basement for some of the higher. Then, again, indirectly, they pass on to their highest condition of cells, which form the groundwork of all tissue, exercising true function.*

Recent, and some of the best microscopical studies in histogeny, show thus the value of these primitive forms, and also that, if we except the secerning processes, there are no powers possessed by adult cells which are not equally possessed by these utricles. In the nutrition of tissue, after it has been formed, as well as in its reproduction, when forming, they still preserve their important agency; for, in the effused plasma of the blood, their number is expressive of the nutritive power, and they form, moreover, the cytoblastematous material of all the cells evolved in the process.

I have thus imperfectly sketched the relations of these elementary forms to tissue, and its formation, as preliminary to the consideration, and for the better elucidation of another process of tissue of a quite dissimilar character.

This is the retrocession of an adult tissue back to its elementary condition, a change which perhaps may be well expressed by the terms *retrograde metamorphosis.*

When a compound tissue has attained its perfect condition—and its function, beyond this (if it has any) is not required, and therefore its nutrition is nearly suspended—there is with it a constant tendency to fall back to its basement composition, and where it is complicated in structure, the different phases of its growth are there seen in an inverse manner. There being no proper death of the part, there is a disintegration, an unfolding, without a decomposition. It is a result, also, which must be carefully distinguished from real atrophy—for in this last the structure is not destroyed, but only the liquids diminished, and a simple change of nutrition in excess, being sufficient to obtain its original power and fulness, which is not the case in tissues whose structure is lost by a retrograde metamorphosis, in which, I scarcely need add, the result is either a granular, blastema-like product, or its near approach.

Now, in every well-formed normal tissue there is a power resident, which we may call a continuation of the germ power, or we may consider it as one of the characteristics of organized matter, but which, at any rate, finds its expression in the repetition constantly of that tissue, whatever it may be, or however situated. Where an injury is sustained, or a part lost, it is from the agency of this power that an attempt is made to replace the lost portion, which, in fact, is perfectly successful in the lower forms of life, only where the germ power is abundant, and where it is almost impossible to produce a nutrition, which differs from the normal type. On the other hand, with animals occupying a higher position in the scale, the nutrition of tissue seems to exist under a more complicated condition; the germ power is in its *minimum,* and where a part is lost, it is rarely replaced exactly.

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* See a paper "On utricles as the primordial-forms of all animal tissues."—*Transact. Amer. Assoc. for the advancement of Science,* Aug. 1850.

In retrograde metamorphosis this power seems to have died out, and there is not even a feeble attempt to keep up the integrity of the tissue; yet a kind of nutrition exists, the vitality is maintained and decomposition prevented. And, exactly as with animals, when a true species is elevated by cultivation above its natural characteristics, these last may enter into its constitution and exist in its germ power, so that they can be perpetuated by hereditary transmission to quite an extent; yet where this power of cultivation ceases, the animal invariably reverts to its normal type. So in retrograde metamorphosis, when the germ power which has urged on these primitive particles to their different ends ceases, there is a tendency for all to recede to their basement, embryonic condition. Of course this process never occurs in a normal condition of tissue, and rarely in the higher compound tissues even in disease, except in the decline of life.

Its relation with disease and diseased products particularly deserve our attention, as here it has a practical as well as a physiological import.

We will first look to the adventitious products; tissues far beneath the normal type and where, therefore, it is best expressed.

With *pus,* for instance—the highest attainable product of inflammation, and which is a corpuscle with several granules—when it has reached this stage, it can pass no farther; and being a non-organizable form—if not there excreted or if pent up in a cavity, it immediately recedes to that granular, utricular condition which marked its formation. And here let me add, that whatever may be argued as to the difference of nature between the cell proper and its nucleus or nuclei—based upon an apparent difference of the effect acids may have upon each—it is pretty certain that when these distinctions are scarcely or not at all evident, their differences, if they did exist, are reconciled by the metamorphosis. The chemical analysis of pus, and especially when from an abscess unconnected with mucous membranes, as given by Von Bibra,* show that water, extractive matter, fat and albumen form almost the entire residue.

In carcinoma these changes are still more apparent, for they are marked by a quite active abnormal nutrition. In encephaloid of the breast, for instance, it is well known to those who are accustomed to such microscopic examinations how rich in cells it is when in progress, and that after having reached its adult age, it undergoes what is called a "fatty degeneration," that is, great quantities of fat are found in both a free and combined condition, while the cells have in a corresponding manner decreased, in other words have undergone that retrograde metamorphosis; a result equally borne out by chemical analysis. After this has taken place the watery portion is disengaged, and may there be absorbed, giving rise to those caverns of various sizes, lined with fat and albumen, which are so common in large and old cancers of the breast. In these instances the abundance of the granules shows the richness of this material, and the existence of free uncombined fat shows its excess over the albumen.

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* Quoted in Simon's Chemistry of Man, vol. ii. p. 91.

Retrograde metamorphosis here constitutes an attempt towards the cure, or a removal of the adventitious matter; for it is comparatively harmless when it has lost its corpuscular condition, and it is thus also prepared for its absorption, as testified by the caverns we find, and which, undoubtedly, might be complete, did the neighbouring vessels preserve their normal power.

In that other important morbid product, tubercle, the retrograde metamorphosis is but another name for its softening, and equally marks its adult age and decay of life; originally composed always of corpuscles, which, whether they be degraded exudation cells or corpuscles *sui generis*, is not by any means a material point in pathology, for we can get no nearer to their real nature. Their short and imperfect life is signified by their rapid tendency to this change, ending in a granular mass, enclosing a few rude rough corpuscles, that have withstood the process.

Here, as in the same with carcinoma, this forms the curative movement. Reduced to water, oil, and albumen, the first being absorbed, the last two are left in such a condition that, if shut off from external influence, they may either remain harmless a long time, or are liable to be hesitatingly taken up by the general nutritive process, a radical cure being then effected; there being no reason why tuberculous matter thus reduced should not be absorbed any more than there is of the common effused granular matter of inflammation. And here I may say that the most trustworthy pathological inquirers show the same result, tuberculous matter entirely disappearing, yet leaving behind it unmistakeable footprints of its former existence.

Now with this change, thus occurring in the three most prominent morbid products of the economy, unless we regard it as a real metamorphosis of material, it is quite difficult to account for the results produced; for we have a cellular tissue, the cells with their involucral albuminous membrane, all reduced to the condition of minute particles, which are not irregular, as from a pulverization of an inorganic body, but are real utricles.

When this change occurs with the higher tissues of a compound and more perfect organization, it is to a much less extent, because their conditions of growth are different, and their union on a higher and more permanent form of existence much stronger, for it involves a definite and fixed function.

But, although thus feebly expressed, it has at least an equal interest in pathology since it exists, with important tissues; and, in the most prominent cases, infringes directly upon the performance of some of the higher functions of life.

The muscular is pre-eminently one of the higher tissues in which it occurs, and to this we will first direct the attention. The muscular tissue is very complicated, quite as much so, perhaps, as any in the body; when therefore it undergoes the retrograde metamorphosis, the changes are more chronic, and the result less uniform than with simple cellular structures. But, before instancing this, it may be proper that the mode of its formation should be briefly alluded to. Although muscular structure has long been made out, with a tolerable uniformity of result, among microscopists, yet much obscurity has always existed as to its mode of formation; and this has been rendered all the more obscure by attempts to deduce the formula of its primitive growth, by picking apart its adult structure. However, from the carefully made observations of Valentine* and Reichert,† tolerable notions were entertained, but which were very far from being satisfactory to all.

To Lebert,‡ of a later day, belongs the credit of affording us definite and well-grounded opinions on this subject; which, as it now appears, is placed in as clear a view as any other point in histogeny. It is briefly as follows: In those parts where muscle is to be developed, large cells first appear; these become elongated, and arrange themselves in a linear seris, thus forming tubes, which constitute the first appearance of muscular *fibres*. These tubes are filled with granules; and the completion of the formation is occupied by the arrangement, in these fibre-tubes, of those granules in a regular manner, giving rise to what are called *primitive fibrillæ*, by microscopical anatomists.

Although I have not followed in the footsteps of Lebert to satisfy my mind practically of the correctness of these results, yet they appear to me to be true from what I have seen of the retrograde metamorphosis of this tissue, for there the gradual unfolding of the structure gives an opportunity to get glimpses of its early growth and formation. As might be supposed, this change is here the inverse of the formative process. First, the granules lose their regular arrangement, and run together, the striated character fading away; then the fibre cells at their points of junction become visible, and you perceive a jointed tube, the contents of which is a granular, oleo-albuminous mass.

This constitutes one of the forms of what is called by pathologists "fatty degeneration of muscle." It may occur under different general relations, which may here be well noticed. These are, first, where it infringes directly upon the life of the individual; and, second, where it exercises of itself no particular detriment. The first is when it is found in the heart; the second when met with in the muscles of the extremities. The last will be noticed first.

I have had the good fortune to meet with several instances in this category, each permitting a careful microscopic examination of the parts. In all these (six, I think) the cause could be traced either to a total disuse of the part, or to a previously existing inflammation, leaving the tissue with a poor and imperfect nutrition, or, lastly, to a starvation of the part from local arterial obstruction.

The following notes of a case taken from my memorandum book will perhaps sufficiently show the conditions of this change as occurring in the muscular system generally, and after an inflammatory process.

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* Muller's Archiv. 1840. p. 198.

† Entwickelungsleben, p. 241.

‡ Annal. des Sc. Nat. 1849.

April 1850. Patient was of middle age. Two years since, he perceived, without known cause, a simple enlargement or "bunch" about the left elbow-joint. It came on without noticeable pain, and continued as a simple tumour for several months. The symptoms of a more acute inflammation appeared; it opened and discharged "scrofulous pus," then closed, then opened again, and so on, like an ordinary scrofulous abscess; leaving ultimately a considerably hard and unyielding tumour just below the joint. The arm was amputated; and a subsequent examination of the tumour exhibited the following appearances. An incised surface showed it to consist of a pale, reddish, fleshy mass, in which were interspersed white bands, these last, in some places, being the entire structure.

Under the microscope, the tough white portions were found to be made up of strong fibres running in the direction of the former muscular fibres; these contained broken nuclei, the remnants of their former cell structure, also quite a quantity of fat in the shape of granules and globules. The pale red portions presented a somewhat different aspect. Floating in the field of the microscope were cylindrical-shaped bodies, the transverse diameter of which was that of normal muscular fibre, and their length was about twice their width. They appeared to be not ragged bits but parts of a perfect whole. The usual muscular striæ were faintly seen in some of them, and occasionally there was perceived a long-jointed fibre evidently made up of these peculiar bodies. Much fat in the form of granules or utricles everywhere was present; in fact, what was not fibre was fat.

To sum up the whole, there was muscular tissue, from a previous damage done to its nutrition, from inflammation, retrograding to its primitive cell-type of structure, the latter becoming more and more apparent as the process took place.*

But this change occurring in the muscular tissue of the heart, has a corresponding import, as the life of the individual is compromised. It has received much attention of late, and especially since the microscope has demonstrated the true nature of the change. It constitutes one form of what is called by authors fatty degeneration of this organ. Rokitansky† was the first, as I am aware, to signify this change, and to distinguish it from others. It is a result which must be separated from that of mere fatty accumulation on and about the organ and between its fibres, which, like the same accumulation on and in the kidneys, being only an expression of general obesity, seldom gives rise to serious results. In this last also the fat exists in the shape of fat-cells, the origin of which can be traced to the surface, for the fatty infiltration (not degeneration) extends from without inwards.

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* Some time after, upon comparing the sketch I made at the time of the microscopical appearances with the figures of muscle developments given by Lebert, I was struck with their similarity.

† Handbuch der pathologishen Anatomie, Band. i. p. 287.

When, on the other hand, these real metamorphotic changes occur, they are traceable, as far as I am aware, to some serious perversion or suspension of the nutrition of the organ, and ossification or a partial obstruction of the coronary arteries is often a concomitant.

The mode of change is here the same as that of other muscles, as we have just described: the striated structure partially disappears, and the fibre appears filled with oleo-albuminous particles, and often considerable free fat; the tonicity of the tissue is lost, and, where these changes are extensive, there occur many sequelæ, the least of which is a feebleness of the heart's action; sudden rupture and death being the most serious. It is enough for me here thus to allude to this change when occurring in this organ; for it has sufficient importance and interest for an article by itself. It is one of those many instances in pathological anatomy, which I am happy to say are constantly increasing, in which the microscope has been of such eminent service, for the nature of this fatty condition of the organ could not be known without it, as it belongs, let me again say, to a quite different class of pathological changes from that of simple fatty accumulation.*

Constant practice in microscopical pathology is all the while convincing me of the frequency of this change in tissues, and that it may serve as the basis of many accidents in medicine. In closing this imperfect sketch of its history, I will speak briefly of it as taking place in other parts, where, although not the less equivocal, it has not been quite as much studied by the microscope.

Changes, referable I think to this process, may be observed in the muscular tissue of the small blood vessels of the brain, leading to what is called their fatty degeneration. This is of importance as bearing upon the subject of apoplexy. Mr. Paget† is the first that I am aware to bring the microscope to bear upon it. He has regarded the change as a "fatty degeneration," and I know too well his accuracy in microscopy to doubt its being so, did not his own language imply that it really comes under the same head as what I have been describing as a retrograde metamorphosis. He says: "When the fatty degeneration has made much progress, changes in the structure, and not rarely changes in the shape also of the affected blood-vessels, may be observed. The chief change of structure appears to consist in a gradual wasting of the more developed proper structures of the vessels." "They waste and totally disappear."

Mr. Paget describes carefully the appearance of the oil globules as they gradually and apparently invade the structure; he mentions also the appearance of many granules, which without doubt are the oil particles invested with albumen; all traceable, as far as my own observation goes, to an impaired nutrition of the vessels, their loss of vitality, and their corresponding receding metamorphosis. In all these cases the fault is with the *vasa vasorum*, their function being feebly performed.

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* The reader is referred to a very interesting article on fatty disease of the heart, in the last number of the *Medico-Chirurgical Transact.*, by Dr. Quain. When recently in London, I had the pleasure of seeing in Dr. Q.'s office many of the specimens which are the basis of the above referred to article.

† London Med. Gaz., Feb. 1850, p. 229.

In blood-vessels of other parts of the body, these same changes occur, and are of not the less pathological import, but space will not allow me to advert to them now.

Within a few years, and since the microscope has been made to bear upon most points of primitive pathology, the presence of fat, either in a free or combined form, in the different organs, has excited much attention, and especially in those cases where it does not, as far as we now know, exist in the normal state. Such, for instance, is the presence of fat in diseased kidneys, rendered all the more prominent by serving as the basis of a theory as to the nature of Bright's disease. Such was the view put forth in 1845 by Dr. Geo. Johnson,* and which he has sought to establish by a series of papers since published.

I cannot here enter into the details upon this point which it deserves, but I hope before long to put together my microscopical data on this subject. It is sufficient now for me to remark that I cannot agree with Dr. Johnson that Bright's disease is simply a fatty degeneration of the kidney; but the microscopical appearances I have sometimes observed I have thought traceable to this same retrograde metamorphosis existing in an imperfect degree, fat and granules being the result. Bright's disease, I may here remark, appears to me to be always, primitively, an acute or a subacute nephritis, and the conditions in which the primary attack may leave the organ are as various as the post-mortem appearances found on dissection. Except in children and young persons,† the nutrition rarely or never gets back to its normal type, but exists in an imperfect state; and from this bad nourishment, the retrograde metamorphosis sometimes occurs, the normal structure then disappearing partially, leaving in its place a low fibrillated tissue, and many oleo-albuminous particles. The appearance of an unusual amount of fat may, in some cases, I think, be due to this cause, for it may be both in and out of the epithelial cells. I can here only thus speak of this subject, leaving until a future time its many important relations.

In conclusion, let me notice this change as occurring in one more tissue, the brain. Ramollissement or softening of this organ is now tolerably well understood, and recent studies in this direction cannot fail to make it more so.‡

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* "On the Pathology of Bright's Disease," Med.-Chir. Trans., vol. xxix.; also "On Inflammatory Diseases of the Kidney," vol. xii., new series.

† For cases of nephritis with concomitant albuminuria, yet passing away entirely, see "The Pathology of the Kidney in Scarlatina," by James Miller, M.D. London, 1850.

‡ See the investigations of *Dr. J. H. Bennett*, in the Edinb. Med. and Surg. Journal, vols. 58, 59, and 60. Also those of *Hasse* in Henle and Pfeufer's Zeitschrift. B. iv, p. 1; and those of *Kolliker*, in his Zeitschrift für Wissensch. Zoologie, B. i. p. 264.

This loss of structure occurs under two conditions; the first with and the second without the previous symptoms, or the subsequent appearances of inflammation—the first with an excess, the second with a deficiency of nutrition—for where softening exists without inflammation, there exists concomitantly an obstruction of the minute arteries of the brain; in other words, the tissue losing its power of tissue repetition, from deficient nourishment, gradually recedes to its primitive condition, and this, generally, so quietly that there are no mild to precede those more severe symptoms that ultimately await the patient.

There is much to be studied on this subject, and in these happier days of microscopical pathology it cannot be long before new data will be brought out.

All questions in pathological anatomy are of daily increasing interest, from their constant elucidation from microscopical studies; particularly is this true of the present one, forming these hastily written remarks; and, should what has been said induce others to pursue this same train of inquiry, they will find a wide range open before them, which may be carefully passed over with increasing delight and profit.

BOSTON, *February*, 1851.

ART. III.—*Bernard's Recent Discoveries in Physiology.* Reported by F. DONALDSON, M. D., Baltimore, Md.

HAVING a few months since witnessed some interesting experiments by M. Bernard, confirming the results of his late important researches in physiology, and not being aware of any notice of them having as yet appeared in our medical journals, we propose giving some account of them to the profession in this country. We are convinced alike of their accuracy and of the important light they are calculated to throw upon some heretofore obscure points in medical science. Indeed, M. B. has not as yet published some of the discoveries to which we shall call attention, and the only mention we have seen of them in print was some notes given in the "*Union Médicale*" of September last.

The first point of which we wish to speak is the discovery of the existence of a communication between the portal vein, the ascending cava and the kidneys, by means of which the urine is secreted from blood which has not as yet passed through the general circulation. It is called by its discoverer the *hepatico-renal circulation.*

Authors had frequently mentioned the rapidity with which substances taken into the stomach could be detected in the urinary secretion, and we have often read in the older writers of certain undefined secret passages. In fact, until cases of extrophy of the bladder proved that the urine came only from the kidneys, by means of the ureters, it was supposed by some that the bladder itself secreted it. Thus the effect of medicines on the economy in general and on the particular action of the kidneys was known to be different when given at different times, and physicians have acted upon the belief, but *why* no one knew. It had always remained undecided how it was that Tiedemann and Gmelin, and afterwards Magendie, in giving the nitrate of potash by the stomach should sometimes have been able to detect its presence in the blood and at others not, in the same animal. It was equally unexplained why poisons taken into the alimentary canal should sometimes have proved fatal, and at others not. Numerous theories had been thought of, but it was left to Bernard to find out the true explanation of these phenomena.

As not unfrequently happens with observers, it was in making some experiments with an entirely different object in view that M. B. was put upon the track of this discovery. He had previously proved that the mesenteric veins took up by far the greater portion of the digested alimentary substances, leaving to the lacteals, properly so called, the office principally of carrying off the oleaginous matters which had been digested by the action of the Pancreatic juice; and it was with the intention of testing what substances the kidneys could eliminate that he introduced into the stomach of a dog some prussiate of potash, and drawing off his urine in ten minutes he detected its presence by the addition of a few drops of a solution of a salt of iron, the beautiful blue of the prussiate of iron appearing immediately. He then killed the animal, and separately collected the blood of the renal veins and arteries, expecting to find the cyanide of potash in the artery and not in the vein, but to his astonishment the reverse was the case. The vein contained a large quantity and the artery scarcely a trace; the animal at the time, by accident, was digesting food. The experiment was repeated several times at different intervals, with invariably the same results, when the animals were in full digestion; but when they were not and the stomach and intestines were at rest, the contrary was the case—he could detect the potash in the blood of the artery, but not in that of the vein. Continuing his experiment, he traced the prussiate of potash from the stomach in its course to the kidneys, finding it in the vena porta, and in the vena cava below the point where the hepatic veins emptied, but nowhere else in the general venous or arterial system—thus showing that there was a different circulation during digestion from what existed at the time of abstinence. Having settled the physiological fact, it remained to solve the problem why it was that a substance taken into the stomach could be detected in the return circulation from an organ, when there were no traces of it in the artery which carried the blood to that viscus. If the fact above stated were not well ascertained and unquestionable, it would sound like an absurdity, it being so directly opposed to the universally received doctrine of the circulation of the blood—and such would it be, were there not a peculiar apparatus adapted by nature for the express purpose, as we shall proceed to show.

During the period of abstinence, the blood which has been collected by the mesenteric veins passes easily through the liver, but when the stomach and intestines are full and these veins absorb a large quantity of fluid and digested matter, the circulation becomes necessarily more active, and owing to the double circulation of the liver, the portal and the regular, the blood can pass but slowly, and consequently the organ becomes congested. To prevent this too great congestion, M. Bernard has discovered that there is provided a peculiar system of vessels conducting a portion of the blood directly from the vena porta to the vena cava ascendens, without its passing through the capillary hepatic circulation. These blood-vessels are found below the hepatic veins at the point where the substance of the liver adheres to the inferior vena cava. In the horse, this communication is very easily demonstrated, by blowing into the vena porta, when the air is heard escaping by the cava. M. B. exhibited a specimen of these vessels of a horse, injected with wax. They were as large as the veins of the stomach, and emptied themselves by open mouths. When the liver becomes engorged, and can receive no more blood, it passes off to the vena cava by these vessels, which serve as a kind of diverticulum, and in this way the free secretion of the liver is protected, as it would be interfered with by an excessive accumulation of the animal fluid. The right side of the heart in its turn is also secured from a too great rush of blood from the vena cava. It is known that the presence of the capsule of Glisson around the branches of the portal vein accelerates the ingress of blood into the liver, whereas the hepatic veins not being so protected, contract with the substance of the organ with which they are so intimately connected, and in the cut surface of the liver, the divisions of the portal vein are closed, but those of the hepatic remain open. The hepatic veins have, moreover, an evident muscular texture, which, when it contracts, draws the tissue of the liver with it. The object of this system is to render more active the circulation, in proportion as the liver becomes engorged. M. Bernard claims having discovered that there exists in the hepatic veins and in the vena cava, from the point where the hepatic empties to the origin of the renal veins, longitudinal contractile muscular fibres of organic life, while in other parts of the venous system circular fibres only are found.

This peculiar construction gives the vena cava the power of preventing too much blood from rushing to the right auricle by contracting and forcing the fluid downwards. This muscular development ceasing opposite the kidneys, the blood is thrown through the renal veins into that organ, and thus the stasis in the cava is relieved. In some animals, as in the rabbit, there are four valves in the cava immediately below the orifice of the renal veins, to prevent the reflux beyond that point. In this way it is proved that the blood coming from the portal vein is subjected to the action of the kidneys before passing through the heart into the general torrent of the circulation.

He has thus proved anatomically what he had previously established as a physiological fact.

The embarrassing question may be asked how the return circulation goes on from the inferior extremities during this stagnation and reflux in the cava. This our author thinks is the office of the collateral veins, the lumbar and vena azygos—they having a constant physiological part to perform, and not, as has been generally supposed, merely the duty of carrying on a supplementary circulation in certain pathological cases of obstruction of the principal venous trunks. The muscular structure in the cava is almost as large as that of the right auricle. In the horse and rabbit it is remarkable, and appears to constitute almost another heart, whereas in the stag, the dog and the cow it is but slight. It is owing to the great development of this singular provision to prevent the liver from becoming too much engorged that certain animals are enabled to run such great distances. In man, where this organization is but slightly marked, it has often been noticed that the liver becomes enlarged from excessive engorgement from much physical exertion. This mechanism of the circulation is prominently seen in animals who take large quantities of aliments but slightly nutritive, or who drink much of fluids.

In this manner we think it is satisfactorily demonstrated that the renal veins have a double duty to perform; during the time of abstinence they conduct the return circulation from the kidneys; during digestion they act as arteries just as the pulmonary veins do for the lungs, and the portal vein for the liver. In effect, during the reflux of blood mentioned above there is a distinct pulsation perceivable in the cava and in the renal veins. This, though difficult to show, yet may be seen by killing a rabbit during digestion and opening immediately the abdominal parietes.

As M. Bernard remarked, when one reflects upon the matter, it is not so much to be wondered at, if we recollect that in fish and in reptiles there exists a porto-renal vein by which a certain quantity of blood passes directly to the kidneys from the mesenteric veins, only a portion being sent to the lungs.

We give to the reader the three following experiments, of which we were witnesses; the results of them cannot be accounted for but by admitting the existence of this smaller circulation.

First Experiment.—By means of a syringe and a tube there was introduced into the stomach of a rabbit a large dose of the cyanide of potash mixed with some carbonate of soda; this last to correct the acidity of the gastric juice, some previous trials having failed from the formation of hydrocyanic acid and the consequent death of the animal.

Before giving the poison, some of the urine was drawn off and tested to prove that it contained no trace of it. Ten minutes after its administration, a few drops only of the solution of the acetate of iron gave the rich blue colour so characteristic of the Prussian blue. In half an hour the animal was killed, the blood of the jugulars and renal veins collected and their serum tested; in the latter, the presence of the medicine was very evident, whereas in the former there was scarcely a trace of it. Still more conclusive was the application of the test to the cut surfaces of the several viscera; that of the kidneys becoming of a deep blue colour, while the others revealed the least perceptible tinge. The inferior cava was much distended.

Second Experiment.—After cutting into the abdomen of a rabbit, and drawing out a small piece of intestine, M. Bernard introduced into one of the mesenteric veins a solution of the cyanide of potash of the strength of twenty parts to the hundred. On submitting the urine immediately afterwards to the test, it was found to contain a large quantity, and there were no unpleasant consequences resulting. Taking another rabbit, he injected into its jugular a solution of the same salt, of only two parts to a hundred, and in a few minutes, before the poison could be discovered in the urinary secretion, the animal was dead. The particular substance used is of no importance, the same result following the administration of any poisonous matter. It cannot be said that it was the liver which destroyed the effect of the medicine, for nearly the whole amount was passed off in the urine. The absence of any fatal consequences in the first rabbit can only be accounted for by the existence of the direct circulation, by means of which the potash was carried to the kidneys and there secreted; the small quantity carried to the heart, and thence through the arterial system, not being sufficient to act injuriously.

Third Experiment.—A solution of the lactate of iron was injected under the skin of the back of a rabbit, and a solution of the prussiate of potash under that of his thigh. The latter salt being very easily absorbed passed at once into the general circulation, and in a short time we were shown a blue coloration at the point where the salt of iron had been placed, a certain and unequivocal evidence of the presence of the prussiate of iron, which could only result from the contact of the two substances. In another animal the iron was inserted under the skin, but the potash given by the stomach, and after waiting much longer than in the first instance, there was no perceptible coloration, owing to the potash having passed off by the kidneys. On testing the blood from the jugular of the second rabbit, at first no coloration ensued; afterwards a slight bluish colour was discoverable, whereas in the urine a quantity of the salt was found, showing how small a proportion had entered the general circulation.

It may be well to remark, that owing to the slowness of the process of assimilation in the rabbit, it is almost always digesting.

Do not these experiments support and indeed prove the truth of M. Bernard's discovery? They explain facts which the imagination had vainly attempted formerly to solve, and show also the importance of choosing the proper mode of administering remedies; how, for example, one can sometimes produce much more energetic effects by the endermic method of introducing medicines. Their therapeutic importance in regard to the time to be selected for giving remedies to affect the general economy, or only the kidneys, will at once strike our readers. We can now account for the differences of the amount of nitrate of potash found in the blood of the animals experimented upon by others; in some cases it having been given during abstinence, and in others when the stomach was full.

We cannot overrate the important bearing these researches have upon the value of an analysis of the urine, the kind of alimentary substance consumed not only influencing, but changing completely, the composition of the renal secretion. The old distinction between herbivorous and carnivorous urine is caused entirely by the azotized or non-azotized food taken by the animals. The human urine in a healthy subject is always acid, but any one can in the course of thirty-six hours render it alkaline by confining himself exclusively to a full vegetable diet. The secretion of the rabbit, which is ordinarily so filled with carbonates, can be made acid by its being fed entirely on nitrogenized food. M. Bernard has proved that the urinary secretion of all animals, herbivorous or carnivorous, is acid when they are fasting, for the simple reason that in the absence of nutriment from without they consume their own tissues, a principal part of which are nitrogenized matters. How careful should we be to impute the presence of an excess of uric acid, or of any of its compounds, or of the carbonates, to any defect in assimilation, without inquiring into the nature of the diet, and of the time when the specimen was voided.

Secretion of Sugar by the Liver.—It was in the *Archives de Médecine*, of November, 1848, that M. Bernard astonished the scientific world by announcing his discovery that sugar, which was so generally found in the vegetable kingdom, also existed in the animal, not as derived from amylaceous and saccharine alimentary substances, but as a constant secretion. As vegetables do not find it already formed for them in the earth, but manufacture it themselves, so he has proved experimentally its production as one of the results of the habitual physiological action of the liver. Since that time he has instituted a number of experiments, confirming and completing his former researches. His doctrine as now taught, we proceed to give.

It is known that there are three kinds of sugar which are commonly taken as alimentary material. First, the cane sugar; that found in the sugar-cane, the beet, the carrot, &c. Secondly, the glucose, which exists in the grape and in different sweet fruits. Finally, milk sugar, a constituent of the mammary secretion of all animals. Of these the grape sugar is the only kind which is assimilable, the other being changed into it during the process of digestion. It had always been supposed that when sugar was found in the blood, or in any of the animal secretions, that it must have come from food which either contained it or from which it could be formed; and chemists had decided that such could not be the case from the protein or nitrogenized matter. Physiologists had inculcated the ingenious idea that animals could not in themselves create any principle found in their bodies, but only possessed the power of destroying what was furnished by the vegetable kingdom, and thus denied the possibility of sugar being manufactured by the animal organization, which only consumed, they said, what was obtained from without. Based upon this notion was the recognized treatment of diabetes,* that of withholding from the patient all amylaceous articles of diet. That this mode of treatment sometimes cured and always ameliorated the disease was unquestionable. M. Bernard's attention having been called to some obstinate cases of this affection, which had resisted all efforts to cure them, notwithstanding the exclusive use of azotised food, he determined to see if he could solve the question how sugar could continue to exist in such quantities in the urinary secretion when there was nothing digested which could furnish it to the system. He commenced his experiments by taking two dogs of the same size and age. One he put upon an amylaceous and saccharine diet, and the other upon meat exclusively. In a few days, by means of a syringe introduced into the jugular, he drew some blood from the right auricle of each of them, and after permitting the clot to form he tested the serum for sugar, and to his surprise, he found that in both was a large quantity. Astonished at this, he repeated a number of times the experiment, with always the same results, invariably finding sugar in the right auricle, whether the animals had been kept on nitrogenized or non-nitrogenised substances, and even when they had consumed no food for days. Pursuing his researches, he attempted to discover where the sugar came from, knowing that the right side of the heart could only be its receptacle. He accordingly examined the contents of all the principal venous trunks, the vena porta,† the inferior and superior cava, the jugular, &c., and, singular to say, he could nowhere detect its presence but in the hepatic veins and in the ascending cava, and thence to the right auricle. There being no trace of it in the blood flowing into the liver, nor yet in the pulmonary artery, was not our experimenter justified in coming to the conclusion that it was fabricated in the liver and destroyed in the lungs? That there were two sources from which the system obtained sugar; one from aliments, the other from the liver as one of its proper normal secretions?

Not content with this, he examined the parenchymatous tissue of the principal organs, and found a large quantity of sugar in the liver, some traces of it in the lungs, but he was unable to detect it in any other. Elated with what he now considered his brilliant discovery, he reported it to MM. Pelouze and Dumas, two of the most eminent chemists in Paris. They, naturally incredulous in regard to a point so calculated to upset the established doctrines as to the formation of sugar, insisted that there must be some mistake, and after witnessing the experiments, they resorted to the plausible theory that as the liver had the peculiar property of retaining and accumulating within its tissue certain metallic poisons, as arsenic, &c., it was probable that the animals which had been fed upon nitrogenized food or kept fasting had a few days previously eaten amylaceous substances, and thus the sugar formed from them had not all passed off from the liver. To show the correctness of his opinion, M. Bernard kept dogs for six weeks from all species of nutriment from which it was possible that sugar could be formed, and still as before he found it both in the blood coming from the liver and in the organ itself. With the energy for which he is so justly distinguished, he continued his investigations on different animals, and satisfied himself that sugar was to be found as the secretion of the liver of the horse, the ox, the dog, the cat and the rabbit; moreover, that it exists in birds, fish, reptiles, even in oysters and snails. And what is still more conclusive as to its being produced in the tissue of the liver, is that it can always be detected in that organ of a fœtus after the fifth month. Further still, the fœtus of oviparous animals which are separated from the mother have exactly the same kind of sugar in their liver and in no other organ!

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* We apply this term as confined to the disease in which there is sugar found in the urine.

† It may be well to add, for the benefit of any who may be disposed to repeat these experiments, that it is important to tie the vena porta near the liver immediately on opening the abdominal parietes, or otherwise there will be a reflux of the blood of that organ into it, from the removal of the pressure and the consequent detection of sugar in the vein.

Following up his experiments, M. B. has proved conclusively that the sugar he had found was a secretion by showing the influence of the nervous system over its production. As an irritation of the ophthalmic branch of the fifth pair leading to the lachrymal gland produced a free flow of tears, so a slight galvanic shock, or irritation with a knife applied to the medulla oblongata at the point of origin of the pneumogastric nerve, caused an increase in the secretion of sugar; so much so that a large quantity was carried off in the urine a few minutes after the operation. A violent shock to the corpora olivaria, or the cutting through of the nerve, would arrest the secretion, as was shown by autopsies made some hours afterwards. We give these not merely as statements made by the professor, but as confirmed by experiments repeated in our presence. We have seen several instances where cases of diabetes were produced in dogs and rabbits at pleasure—the urine drawn off previous to the operation giving us no evidence of the presence of sugar, whereas that voided twenty minutes after contained a large quantity, as did the blood and every secretion except the saliva, into which it never enters. So true is this that, in one instance, M. B. detected it in the urine of some kittens who had been fed by a cat, on whom he had a few minutes previous operated, showing that it had been transmitted through the milk. We have witnessed the arrest of the secretion by a violent shock to the nervous system, and by the communication of the nerve being destroyed, so that the urine, which a few minutes previous had contained a large quantity, was rendered perfectly free from it. Subsequent experiments have somewhat modified this last fact, M. B. having in some cases produced the secretion by irritating the olivary eminences notwithstanding the previous severance of the nerve. The probable explanation of this is that the grand sympathetic also serves as a conductor, as in a case of diabetes observed by Duncan; its volume below the diaphragm was found to be three or four times greater than what it normally should be. The portion of the medulla oblongata which appears to be most intimately connected with the production of sugar in the liver is not more than three lines in diameter, lying in the groove between the corpora restiformia, and the corpora olivaria, and over the adjoining part of the latter. M. B. can predict the amount which will be secreted from the depth of his incision; if the instrument employed is not thicker than a millimetre, or the twenty-fifth part of an inch, the proportion in the urine will be four parts in a hundred. Beyond a certain point, of course, there is great danger of killing the animal or of arresting the secretion.

The continuance of the presence of sugar in the urine after the operation is variable, according to the animal experimented upon, and also the manner employed. In general in the rabbit it lasts forty-eight hours, and in the dog four days, and in one instance as long as seven days.

There were several phenomena which presented themselves as accompanying these experiments which are well worth noticing. The animals were continually in motion; their excitability was such that one might have supposed that some preparation of strychnine had been used. This continued until the sugar could no longer be discovered in the urine, as did also the acceleration of the respiration; which can be explained by the extra duty the lungs had to perform in destroying so large a quantity of sugar. May not this excessive fatigue of the respiratory organs account for the liability of diabetic patients to pneumonia and phthisis, which so often are the cause of their death. A curious fact elicited was that the temperature of the body was diminished several degrees. This is singular, as M. Magendie, judging from the fact that the amount of sugar secreted was greater in birds and other animals where the temperature was higher, and indeed in proportion to the elevation of the temperature, had supposed that its destruction in the lungs was one of the causes of animal heat. In the rabbits rendered diabetic there was an increase of the urinary secretion, as there generally is in the human subject. The amount of salts appeared to be diminished, but this was owing to the quantity of liquid. As to the perspiration, which in man is to a great extent suppressed, it was difficult to decide on the animal.

The secretion of sugar may be arrested by different causes, as an acute pain caused by any operation on the nervous system, such as exposing the medulla oblongata, or pricking the sciatic nerve. Indeed, in renewing his experiments on the excitability of the eighth pair, M. B. has been surprised to find that often instead of augmenting the secretion, he has caused it to disappear, though the irritation appeared but slight; and now he acknowledges that the suppression takes place as a result of almost any lesion of the nervous system, except that of the olivary bodies and of the space about them, before mentioned. Diseases, such as intermittent fever, pneumonia, &c., or indeed anything which affects sensibly the nervous system, interrupt this secretion. There was a case in the service of M. Andral of a diabetic woman who ceased to discharge sugar in her urine at each attack of diarrhœa, to which she was subject. A slow lingering death from any cause has this effect. It is known that frequently in diabetic patients there is an absence during the last stage of the disease of the presence of the characteristic symptom in the urine caused by the complete exhaustion of the nervous energy. So it is not surprising if sometimes no sugar is found in the liver of patients who have died of diabetes. M. B. has invariably detected the presence of sugar in the livers of different animals, as he procured them from the butchers. Anxious to get a human liver of a subject that had not died of a disease which, by its long continuance, might have affected the saccharine secretion, he obtained that of a man who had been guillotined the day previous, and experimenting upon it before the class, he found it contained somewhat more than an ounce of diabetic sugar. A short time previous, he had had an opportunity of examining a patient of M. Rayer, who had for a long time been suffering with glucosuria, of which he had died suddenly; the amount of sugar in his liver was two ounces and a half, more than double that of the healthy one. In general, animals who eat amylaceous substances, secrete sugar in greater quantities than others, and the longer abstinence is prolonged the less the liver contains. Adults require and secrete more than the young.

As we mentioned before, the only kind of sugar which is assimilable is the grape, and all other varieties are converted into it by the combined action of the bile and the pancreatic juice before being taken into the general circulation. The sugar found in and secreted by the liver differs from the ordinary glucose only in certain physiological properties, in being more readily absorbed into the circulation, while it is more easily and in greater quantities destroyed in the lungs. It is proved to be of the second variety, moreover, by its difficult crystallization, by its reducing the salts of copper, and from the fact of its refracting rays of light to the left. It is distinguishable from the sugar of milk because the latter is indestructible in the blood, and never ferments, and it also corresponds in every particular to the saccharine matter of diabetic urine.

M. Bernard, in testing for the presence of sugar, used all the different modes heretofore proposed, the taste, evaporation of the liquid, fermentation on the addition of yeast, and the consequent production of alcohol and carbonic acid; the process of M. Péligot, which consists in making a saccharate of lime, and that of MM. Biot and Clerget, by means of polarized light. The most delicate and surest one employed was the double tartrate of copper and potash, which is known as "la liqueur de Bareswil."* It is Trommer's test somewhat modified, the copper and potash being used together instead of separately. The addition of a few drops of this solution to the suspected urine or to the decoction of a piece of the liver, or to the serum of the blood, will, on the application of the heat of a spirit-lamp, in a few minutes reveal the presence even of a minute proportion of sugar by the liquid becoming at first of yellowish green, and by degrees more and more of a reddish-yellow colour in proportion to the amount contained. This coloration does not take place with any other variety of sugar but the glucose. Sometimes, however, the presence of organic matter may produce deception, and to get rid of it, it is recommended to precipitate it by the acetate of lead, and filtering it, to add some hydro-sulphuric acid, the liquid to be again filtered before using the test. In herbiferous urine it is well to add a few drops of sulphuric acid to free it of the amount of carbonates which may render obscure the coloration. The potash destroys the sugar, transforming it into glucic and paraglucic acid. The salt of copper yields part of its oxygen to substances which have a great affinity for it, and passes to the state of a hydrate and afterwards an anhydrous protoxide, and thus is caused the change of colour from blue to yellow and then to red. The amount of copper reduced being in proportion to the quantity of sugar, it is easy to calculate how much of the latter is present.

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* We give the proportions of this reactive as one which is readily and easily applied.

℞.—Crystallized carbonate of soda,
Caustic potash, āā ʒi. ℈i.
Bi tartrate of potash ʒi. ℈ii.
Sulphate of copper ʒi.
Distilled water Oj.—M.
To be boiled and then filtered.

The interesting question arises as to what becomes of the sugar, whether secreted by the liver or formed from alimentary substances. We have seen that it is destroyed in the lungs, where with the blood it is exposed over a large surface to the contact of the air. M. Bernard proved by a simple experiment that the destruction of sugar was not, as was its production, under the influence of the nervous system; but altogether a chemical phenomenon. He cut both the pneumogastrics of an animal, and injecting some grape sugar into the blood, found that it was consumed, as in the case of the integrity of the nerves. Moreover, sugar in blood disappears when in contact with air out of the body, as well as in the lungs. It is necessary that the blood should be alkaline for this to take place, for if an acid be added, the destruction is prevented. The contrary is the case in regard to cane sugar, the presence of an alkali interfering with its being destroyed. Attempts have been made to render the blood of animals acid by the injection of vegetable acids, but death has always ensued too soon. M. Bernard found on adding an alkali to blood coming from the liver, that the destruction of the saccharine principle took place very gradually, and he is disposed to believe that the usual alkalinity of the blood favours, but is not the cause of, the consumption of the sugar, which is owing to a peculiar organic matter, some ferment which he has not yet been able to seize. He thinks this supposition probable from knowing the effect in other parts of the economy of animal substances which exist in very small proportions, and which apparently have but little power; the diastase, like the strong acids, converting amylaceous matter into sugar. This ferment acts not like yeast, by producing alcohol and carbonic acid, but by converting the sugar into lactic acid and carbonic acid; the latter of which is exhaled from the lungs. In the artificial diabetes produced on animals, the amount of carbonic acid given off by the lungs was much greater than it was before the experiments; and furthermore, their arterial blood became much darker, and gradually resumed its normal tint as the excess of sugar diminished. Thus it was proved that the amount of carbonic acid was in proportion to that of the sugar. It is calculated from experiments by injecting this diabetic sugar into the veins, that the lungs can destroy over and above what they ordinarily do, as much as five drachms (ʒv), whereas of the common grape sugar only one drachm (ʒi); all above this passing off in the secretions. Cane sugar thus introduced is found untouched in the urine.

If the secretion of sugar by a lesion of the olivary bodies surprises physiologists, its arrest by any trouble of the nervous system should not, for it has often been observed that the secretion of the mammary gland can be altered in quality or even entirely suspended by a strong moral impression, and still more by an acute physical pain. In the same way, a violent passion or fright has affected the formation of the bile, the elements of which remaining in the blood, cause a jaundiced appearance of the eyes, the skin, &c.

This discovery of this hepatic secretion shows us the nature of diabetes mellitus, for that disease has as its principal symptom an excess of this identical sugar.

At first Bernard was inclined to believe that the cause of the production of an abnormal quantity was some affection of the eighth pair of nerves, but his more recent researches have somewhat modified this opinion. Whether the primary lesion exists at their point of origin or in the liver itself it is difficult to decide. This organ is generally hypertrophied, but its anatomical examination has as yet shewn nothing. The ancient theories, explanatory of this singular disease, are proved in a great measure to be groundless. The hypertrophy of the kidneys and the lungs as described by M. Rayer is accounted for by the extra duty they have to do; the one in eliminating the sugar from the blood and the other in its consumption.

Rollo regarded it as the effect of a disease of the stomach in which the gastric juice contains a principle not found in the healthy state, which acts upon starch, converting it into sugar. M. Bouchardat in urging this view, states the fact that large quantities of sugar have been found in matters vomited by diabetic patients, but this is no proof, for, as we before mentioned, the gastric juice itself, like the other secretions, contains more or less where from any cause there is an excess in the system. The ingenious reasoning of M. Bouchardat is rendered unnecessary, it being now established that it is not only from feculant substances taken into the stomach that sugar is formed. Moreover, it is not necessary, as he states, that sugar should first be transformed into lactic acid before being absorbed, it having been proved that grape sugar as such enters into the circulation and passes off by the lungs. M. Mialhe's idea of diabetes is founded upon two suppositions, both of which are gratuitous. In the first place, it is not the alkalinity of the blood which destroys the sugar, it being merely an accessory; then the suppressed cutaneous transpiration does not render the blood either acid or neutral, for it remains invariably, so Mr. Bernard stated, alkaline.

Experiments of suppressing the cutaneous exhalation of animals by varnishing them all over have neither rendered them diabetic nor yet altered the alkaline character of their blood. In admitting that the diabetic state is an exaggeration of a natural function of the liver and consequently a disease of that organ, it still remains to be determined what are the causes and how they act to produce it. It is not only the thirst which is increased in persons suffering with this disease, but the activity of all the nutritive functions is greater; the appetite is more craving; the respiration accelerated, &c.

The great frequency of this disease in England and Germany, where it is common among children and very old persons, though it more generally attacks the middle-aged, is accounted for by the habitual use of fermented liquors, which, it is said, favour its development. It is believed that debilitating causes, bad food, excesses, the passions, low and unhealthy habitations, render its production more easy.

The last point we propose noticing is the therapeutical application which, after all, ought to be the end and aim of all scientific medical researches. As it is certain that aliments which contain sugar or starch increase the amount of saccharine matter in the urine of diabetic patients, and thus aggravate the disease, they should, as far as possible, be avoided. In this way, we are able to destroy a part of the morbid element; but it is positive that, notwithstanding their suppression, the sugar continues to show itself in the secretions.

M. Bernard has found that the acids and the ammoniacal preparations recommended by some fatigue the stomach and effect but little; the efficacy of astringents has been much overstated. Quinine, in combination with iron, has produced good results. Any remedies which act decidedly upon the nervous system, such as alkalis (urged by Mialhe), iodine (tried by Lugol), opium, creosote, mercury, &c., are beneficial, but unfortunately their effect is but temporary, the constitution soon becoming accustomed to them. M. B. hopes that observers will in future direct their attention in their treatment to the liver and to the nervous system, and these experiments may yet give us some valuable results, now that the nature of the disease is settled.

We have already occupied so much space that we must postpone, for a future communication, giving the results of some investigations in regard to the *formation of fat*, the *action of the pancreatic juice upon oleaginous substances*, &c., which we hope will not prove uninteresting to our readers.

ART. IV.—*A Statement of two Suits for Malpractice, tried in November and December*, 1850, *in the Court of Erie County, Pa.* By WM. MAXWELL WOOD, M. D., Surgeon U. S. Navy.

IN a former number of the "*American Journal of the Medical Sciences,*" (October, 1849,) I reported the extraordinary course taken, in this county, by suits for malpractice, showing that their result has been to visit the penalties of the law upon educated and skilful practitioners, and to give a controlling influence to quacks and pretenders, who, upon the witness' stand, direct the verdicts of the juries.

In that article I alluded to two suits impending over a well-educated young German physician, then absent in California. He has since returned, and the suits have been prosecuted to a conclusion. They present such extraordinary features in the nature of the testimony—the charge of the judge—and the verdicts of the juries, that they seem to be worthy the attention of the profession; and among its proposed reforms, that surely would be a desirable one which would insure the fixed principles and established facts of the profession a value as evidence over the crude opinions of ignorant and perhaps interested individuals. If the standard authorities of medicine and surgery are not evidence in our courts of justice, the educated practitioner has but little to hope from the verdicts of juries, as it is probable that the medical men of local authority and influence may differ widely in the views from the learned men of more general authority. The testimony was very voluminous. I have given every point, omitting unnecessary repetitions.

CASE 1st.

ALVINA C. BOOTH
vs.
CHARLES BRANDES.
} Tried Nov. 27th, 1850.

Louisia Wood testified that, on the 24th of January, 1848, Miss Booth and herself called at the office of Dr. Brandes, and both had what purported to be vaccine matter put into their arms, the Dr. moistening a piece of scab upon a glass and using the same matter and the same instrument in both cases. Miss Booth had never been vaccinated, the witness had been in her childhood. After inserting the matter and it being dried, the Dr. placed a piece of plaster over the punctures. He accompanied them to the door, and said, "Please call again and let me see what it proves to be." Their arms pained them on the way home. On Friday (the vaccination having been on Monday), both the girls went in an open wagon to Fairview (a village about twelve miles from Erie), arrived there about sundown, having spoken to no one, nor stopped at any place on the road. On Monday, Miss Booth was taken very ill, with severe vomiting. On Tuesday they returned to Erie, and Dr. B. was sent for. He reproved them for going to the country; said "Miss Booth had taken cold;

and would likely have varioloid." He said that erysipelas, scarlet fever, and scrofula would run into varioloid, and from that to small-pox. Said when anybody got cold it would do so. He turned to me and asked, "Has your arm worked, Miss Booth?" I said it had not; spoke before I thought. He said it must work, it will work; it is pure genuine matter; told me to call over again, he would try it over. Miss Booth's arm was very much swollen; the place where she was vaccinated was about the size of a shilling, very deep sore, looked red and angry.

The case proved to be one of bad confluent small-pox, and the plaintiff is now very much scarred by it. Was sick three months. Miss Wood testified further in relation to herself, that she lived twenty or thirty rods from the house in which Miss Booth was sick, there being three houses between them. On Wednesday, the witness, Miss Wood, was taken sick, and thinking she was going to have small-pox, she removed to the house in which Miss Booth was, where she remained three weeks. The following I give in her own words.

"On Friday my arm was badly swollen. Dr. said to poultice it; tried to stop my vomiting but could not; my arm was green where it was vaccinated. He took the plaster off; next day said I would not have the varioloid; only fifty pimples on me; said to stay where I was; sent for Dr. Dickinson. He said to take me over to Booth's; my arm turned green, swelled very bad, had to wear loose dress. Pain would extend to my shoulder, and then to my head. Sometimes it would extend to my other shoulder. It threw me into fits. Plaintiff was not exposed to my knowledge to small-pox."

On her cross-examination this witness testified that she and the plaintiffs had come from Ohio on the 24th of December, that she was twenty-one or twenty-two years old when vaccinated by Dr. B., was going to school at the academy, had told no one that. They had been exposed, and had heard that the little girls who lived in town had the small-pox. The room in which Miss B. was sick was very warm; had a stove with a fire in it. Alvina Booth, sister to the plaintiff, testified in substance as the preceding witness, and to the following points in addition. The Dr. said her sister had the varioloid, not to let the air come to her face. She would not have her pitted for fifty dollars. Her health before this was good, though not a strong constitution. Since her health had been very poor; red spots would come out on her arm and extend up to her neck. They varied in size, and would continue for an hour or more. This lasted to the present time. She is sometimes very weak, so much so that she can hardly walk; sometimes is not able to sit up more than half the day. Her eyesight is not as it was before by any means. First year she could not see to read; cannot in the evening now. A black man who lived about forty rods from where we did died of the small-pox about 1st December.

On her cross-examination she testified that two others of the black man's family had small-pox, one at the same time with him, and one afterwards.

"The little girls had it on Ninth Street near the academy. It was near the academy some time in January, I think. I did not take the small-pox; Dr. Vosburgh vaccinated me. Have had no conversation with Miss Booth or Miss Wood in this matter. My sister had the small-pox, but Miss Wood had not."

Lewis Booth, brother of the plaintiff, gave in all points known to him the same testimony as the preceding witnesses. On cross-examination, said his sister had always been weakly.

Asaph Booth, the father, testified to the fact that his daughter had never been vaccinated in childhood.

Christiana Carr testified to the sickness of Miss B., and said, "Saw Miss Wood's arm the day she went to Walnut Creek (Fairview); there was a greenish water running from it; the arm was swollen badly, sore coloured green." This, it will be noticed, was four days from vaccination. Sandford Carr proved the going to Fairview, and that the girls got wet from rain.

The next witness was considered a more important one, and is thought to have influenced the decision of the cases. I therefore give the testimony in full.

Joab Slocum. "I was vaccinated by Dr. Brandes, three years this coming winter; not far from a month before the plaintiff was; I became sick in a few days. I asked the Dr. if I had the small-pox? He said he thought not; that the vaccine matter was working with the erysipelas in my system. I told him I thought it was the small-pox. He got a scab off my arm. He said he intended to use it. He said that makes no difference, and took it along. I did have the small-pox or the varioloid. Have seen the small-pox since, and think it was the small-pox. I was broken out considerably on my head, and other parts of my body. Had chills and fever. About the time of breaking out, I had fever. The night before I broke out I was flighty. There was a smell about me such as I have smelt on small-pox patients."

Cross-examination.—"It was about 1st of January I was vaccinated. Some spots on my face; could see pimples on my arm. Have always had erysipelas. There is a kind of fever when the erysipelas is coming out. It comes out not all over me. Erysipelas comes out, you know, in little pimples, watery pimples. This time they came in large lumps. Some of them I opened, and they had a matter in them. Dr. took the scab off from my arm the place he had vaccinated; never was sick enough to be laid up with the erysipelas. It was the thirteenth day that I broke out, and the same day Dr. took the scab. I felt fever some time before I broke out. The breaking out was not like the erysipelas."

Emily Slocum, wife of the last witness. "In January, 1848, about the 1st, my husband was taken sick; had been vaccinated. The Dr. was sent for. The Dr. got a scab then. I told him that I thought the scab would not be good, and he said there was nothing of erysipelas about that; Brandes said it was not the small-pox. He said the kine-pox sometimes broke out so. Slocum was broke out on his stomach principally. He had frequently had the erysipelas before. The pimples did not look like erysipelas pimples. I heard the same conversation my husband has mentioned. He was light-headed and had much pain. Broke out considerable. The disease compared exactly with the cases of small-pox I have since seen. Saw Miss Booth, Miss Henelin, and my own child. This was since my husband's sickness. The Dr. said that the child had contracted the disease from the father by rubbing a sore place on the cheek against his arm. It was the last of January the child took ill; said it was the kine-pox. The child did not sleep with its father. The child occupied the bed that I did. The child was but little sick. The sore looked as if it had been vaccinated on the face. The mark is like a pit; only one mark. The marks on the child were like those on my husband."

Two other witnesses were called to prove that they had seen red spots on Miss Booth's face for half an hour at a time.

We now come to the medical testimony.

Dr. Jacob Bosbrugh "had been a practicing physician for thirty-five years; saw the plaintiff with confluent small-pox; described the character and course of small-pox; said the ordinary symptoms of vaccination were mild; but that death sometimes resulted from it, though he never had seen a fatal case. A breaking out on different parts of the body often occurs from vaccination. He had frequently seen pimples come out after vaccination."

Dr. S. Dickinson "saw Miss Booth two or three times. It was a bad case of confluent small-pox. The only one he had ever seen so severe was fatal. After inoculation, the premonitory symptoms would begin from six to eight days. The rash we look for in four days or so afterwards. *Never saw a case of inoculation.* A person may be inoculated and have confluent small-pox. The confluent scarcely ever leaves the system as good as before; chronic affections of the liver, lungs, &c., result; would expect less stamina of constitution afterwards than previous. The eye might be left bad, weak. Don't know in my experience of any organ but the eye being affected. Was called to attend Mrs. Miles about 22d January; she had variola. (This lady's testimony to her having small-pox was read in court.) Vaccine matter would not from cold run into varioloid; might as well expect a crop of corn from buckwheat; erysipelas, scrofula, or scarlet fever would not run into varioloid.

"Saw Miss Wood's arm. The arm was considerably swollen, but not more than ordinary cases sometimes present. The edges were considerably rougher, and the sore was dug out instead of being filled up as vaccine pustules often are; around the sore there was a deep-seated greenish hue, such as I had not seen before. It was not a healthy sore from *inoculation* or *vaccination*, nothing like a vaccine pustule. There were some small pimples around the sore; I have never seen a rash from vaccination, but authorities speak of it. If the patient had been previously vaccinated, I cannot tell what would be the appearance of the sore. I told Miss Wood she would not have the small-pox, because she was in a typhoid state."

Cross-examined.—"Small-pox does not exist without inoculation or contagion; much small-pox in town that winter, and more in the spring; the case of the black family was about this time; have no doubt that vaccine rash might be mistaken by ignorant persons for small-pox; small-pox is sometimes epidemic; confluent is more likely to occur in the natural way than from inoculation; vaccination might arrest the disease entirely, if done after the virus is received into the system; vaccine and small-pox will run together. There is a difference between the *vaccine pustule and the inoculated pustule; could tell the difference as a general thing.*"

Dr. Peter Faulkner.—This witness practices both as a regular physician and as a homœopathist. "He saw Miss Booth with bad confluent small-pox. The premonitory symptoms of small-pox vary in different persons. Soon after the insertion of virus pain occurs. From the fifth day the febrile symptoms commence. Sixth day, pain in the back and head, with vomiting; about the seventh or eighth a rash makes its appearance, sometimes sooner, about the face and neck, and parts that are exposed to the air; ninth day, the pustules are full. Generally a secondary fever on the fourteenth day, or about that. The sequelæ of small-pox, as far as my experience goes, are not bad when from inoculation.

"Saw Miss Wood's arm. It was much swollen, an ulcer about half way between the elbow and shoulder, deep, uneven; surface about the ulcer discoloured, yellow and green. I could not say that it was produced by vaccination. It was more extensive than a vaccine sore. She was in pain, and nervously irritable. There are descriptions given by authors of very malignant results from vaccine matter. Small-pox matter inserted into the arm of a person who had been vaccinated would merely suppurate and pass off again. It might produce a mild form of small-pox. Matter taken from a scrofulous subject would, if the system was predisposed, produce bad effects perhaps. Confluent small-pox may follow from inoculation—*frequently results in confluent small-pox.* Inoculation generally produces a mild disease, *because the system is prepared.*

Cross-examined.—"Seventh to ninth day the pustules come out; generally the case in inoculation; taking cold has in my own practice caused extreme inflammation. Small-pox is epidemic or rather endemic; it will, for example, when in Erie be taken by persons who breathe the effluvium. There is a predisposition to take small-pox when it is in the neighbourhood. *Saw two hundred cases of small-pox from inoculation; never saw but one case of confluent small-pox from inoculation.*

"Confluent small-pox may result from inoculation unless the system is prepared for it. *Don't know any difference between inoculated and natural, unless the system is prepared for it.* Contagion may occur at distance of twenty feet."

Dr. A. Beebe testifies generally as to the nature and course of small-pox; "that Miss Booth's was a bad case of confluent small-pox, and Miss Wood's a very sore arm. He had seen very sore arms from vaccination. Inoculation generally produces a mild disease, but the confluent might result from it. He believed that the only preparation necessary for inoculation was to reduce a too full habit, and to nourish a feeble one, but that a healthy state of system needed no preparation. There was considerable small-pox in Erie the same season as this case."

Dr. C. T. Perkins had seen small-pox follow inoculation, but it was suspected the lady had been previously exposed. Contagion produces a more malignant disease than inoculation. It is usual to prepare for inoculation by diet. Vaccine matter sometimes produces very bad and malignant sores.

Dr. W. B. Dodge, an eclectic physician.—General testimony as to the nature of small-pox, natural and inoculated, his views being those of the standard authorities.

This closed the medical testimony for the prosecution. On the part of the defence five medical gentlemen were examined, whose testimony went to show the general mild character of inoculative small-pox, irrespective of preparation; and that sometimes the disease appeared to be epidemic; that there were frequent cases in which the patients could not tell when or how they took the disease; and the two cases reported as having occurred in the Eastern Penitentiary of this State were alluded to. These gentlemen also testified to the dangerous ulcers which sometimes follow re-vaccination.

The remarks of Gregory in "Cyclopædia of Practical Medicine," of Ford in his "Practice," upon the inflammation and ulceration of re-vaccination were read to the jury; and also the cases from the Boston Society for Medical Improvement, reported in the number of this Journal for Oct. 1850. Witnesses were also brought to prove that Dr. Brandes spoke most imperfect English, and generally required an interpreter at the time he is said to have made the remarks to the plaintiff and others respecting the nature and course of the small-pox, or varioloid, and the diseases which might change into them.

The charge of the judge (Church) was a most able one upon the relation between the community and medical men, and the obligations which one owes the other. He, however, threw out the authority of all medical works as testimony, and that of the Boston cases.

The next case was that of Miss Wood, now Mrs. Brown, against Dr. Brandes for the sore arm resulting from this vaccination.

The testimony was in general a repetition of that in the former case, excepting that it was proved on the part of the prosecution that the lady, since having the inflamed arm, had been subject to fits, and that, during these fits, her head was drawn towards the arm which had been affected. The judge in his charge dwelt upon this as a fact of some value. On the part of the defence evidence was brought to show that she was reported to have had a fit before the vaccination. From the description of these fits they were nothing more than hysterical. The medical testimony proved the bad results sometimes following re-vaccination, and cases were brought before the jury in which very sore arms had resulted, both in original and re-vaccination, from the use of matter which in other cases had acted well. The same works and reports were read in this trial as in the other.

From the evidence in these cases, the profession, it is supposed, will see nothing more than facts of ordinary occurrence, and for which the practitioner should not be held responsible. During the prevalence of small-pox, and while it was or had been within a few rods of their residence, two adults seek the protection of vaccination; one has never been vaccinated, and the other has been in her childhood. One week afterwards, the individual who has never been vaccinated is attacked with what proves to be a bad case of confluent small-pox, lasting for three months, the poison of which may have been in her system for two weeks before she was vaccinated. The other case results in a sore arm, such as all experience, and the very recent experience of the most able men in the profession, show to be a frequent result of re-vaccination, a result against which warning is given by all respectable medical authorities. Yet in both these cases it is proved that the same matter is used. The nature of the case of sore arm alone would show that the matter used was vaccine matter, and the confluent virulent character of the small-pox case ought to have shown the chances so much in favour of a natural infection as to have exonerated the Dr. according to all principles of justice. But we find the established facts of inoculation set aside by medical men claiming to be respectable, showing that there is no difference between natural and inoculated small-pox, except from the system being prepared for inoculation.

The stupid absurdity and ignorance of the man Slocum's testimony need no comment. The vaccine pustule on his child's cheek renders it most probable that he had been vaccinated, and he may at the same time have had some aggravation of the cutaneous disease to which he is subject. If Dr. B. told Slocum that the crust he took from his arm would not carry erysipelas, it is highly improbable that he told the plaintiffs that this and other diseases would pass into varioloid; and the very imperfect manner in which he spoke English at the time renders it almost certain that the witnesses were mistaken, or testified their own ideas upon the subject, and which they may have misunderstood him to sanction. The Dr. speaks imperfect English now.

The juries came to a different conclusion from what it is supposed the profession will in regard to these cases, and for the first charged the Dr. fourteen hundred and fifty dollars, and for the second five hundred dollars. A new trial was asked in the first case, but refused. If the truth is in the judgment it is supposed the profession will form of these cases, a very great wrong has been done this young foreigner—a wrong not limited to the large pecuniary fine, but extending to the injury of his professional reputation, and to the distress which is inflicted by an act of injustice done under the forms of law and justice. A great wrong has been done the profession, because the successful result to the prosecution of one such case may beget many other equally unfounded prosecutions, and render the performance of professional duties at all times unsafe to every practitioner.

It would seem, from these cases, to be highly important for the profession to take some steps to determine what shall be medical evidence, and to secure for our courts such testimony as shall be reliable. It would certainly seem rational that the principles and the facts recorded by standard authors, those who are acknowledged as such by the profession, would afford more correct information to juries than the individual opinions of ill-educated, prejudiced, and rival, perhaps hostile, practitioners; or than the opinions of unprincipled quacks.

As it is not a subject of statute regulation, the presumption is that the same principles would be acknowledged in the courts of Great Britain and of this country; but such is not the fact. In the cases now reported, the judge insisted upon the individual opinions of each medical witness. The following quotation from a review of "Hooker's Physician and Patient," page 505 of the October No., 1850, of the "British and Foreign Medico-Chirurgical Review," would show a different view upon the part of the English judge:—

"One eminent physician, not many weeks ago, when asked his *opinion* only by counsel in the case of Robert Page, was sharply reproved by the presiding judge (because, according to his oath, he answered the question so put) with the insulting remark, that he (the judge) would not allow medical men to take upon themselves the functions of judge and jury."

This matter certainly should be clearly understood, and some measure taken to prevent the evils shown by the suits for malpractice now reported.

I have examined the statement of the evidence as reported in the foregoing statement, and the same is reported substantially as given in evidence on the trial.

JAMES C. MARSHALL,
Atty. for Plff's.

ERIE, *March* 15th, 1851.

I have also examined the foregoing condensed statement of the evidence in the cases of Booth *vs.* Brandes, and Wood *vs.* Brandes, and find it to contain a fair statement of all the material evidence given on the trial.

WM. A. GALBRAITH,
Atty. for Defendant.

Art. V.—*Cases of Apoplexy, and the Various Forms of Softening of the Brain; with Remarks.* By W. Henry Thayer, M. D. [Read to the Boston Society for Medical Observation, October 21st and November 18th, 1850.]

Case I.—*Apoplexy, with Effusion of Blood.*—Mrs. A. is an American woman, æt. 45, very tall, and of large frame, but spare, and of sallow complexion. She has borne seven children, but has been a widow for ten years past. Her son reports that, although not very robust, she has always been free from long or serious sickness; the only trouble which he knew her to suffer being attacks of "sick headache," to which she has been liable for years.

My acquaintance with her began in May, 1850. She has consulted me once since, on account of a slight attack of cholera morbus. From one of her servants I learn that, ever since she has lived with her (a period of five months), Mrs. A. has been the subject of almost daily pain in the back of her neck and extending up through occiput to vertex, which has frequently been relieved by friction. Her catamenia have been regular, beginning every four weeks, continuing always one week, accompanied with severe pain in the pelvic region, usually so great as to oblige her to go to bed for a day at least. During her catamenial periods, the pain in head and neck has been much aggravated, without any nausea or vomiting. Her last catamenial discharge ceased on Sunday, Oct. 13th. She has been habitually costive.

It may be mentioned here that, since the 1st of May, 1850, she has been matron of an asylum for aged women, and has there been subjected to great anxiety from the turbulent disposition of some of the inmates. She has also had much solicitude for the fate of one of her sons, who has been epileptic for two years past. Her life lately, and for several years before, has, however, been one of great bodily activity.

On Monday, Oct. 14th, 1850, "she seemed," says her maid, "as well as ever." She dined, between twelve and one o'clock, on fried fresh pork, and afterwards ate a number of peaches. She was out most of the afternoon; came home at 5 P. M., complaining of cold feet, and sat by the fire for half an hour, talking cheerfully all the time. About 5½ o'clock she suddenly uttered an exclamation of suffering, put her hand to her chest, and started to go up stairs. By the assistance of her maid, she succeeded in reaching the second story, where she staggered, and fell upon the sofa. She writhed, ground her teeth, grasped her clothes as if to tear them from her; and when spoken to, opened her eyes, but did not speak. Her maid left her for some restorative, and when she returned a moment later, found her jaws firmly closed, the remainder of her body entirely relaxed, and no evidence of consciousness.

At 6 P. M. she was seen by a neighbouring physician. He reports that she was in perfect coma, with a slow, irregular pulse; jaws firmly closed, but her other muscles relaxed; and he noticed that the left eye was more prominent than the right. He gave her a warm bath and a simple enema; a mixture of ipecac. with six or eight grains of tartrate of antimony; applied eight leeches to her temples, and sinapisms to her feet. The enema was retained. An hour after the emetic dose, she vomited several ounces of undigested food—large masses of meat and fruit, which were thrown up into her mouth, and thence removed by the physician. At 9 P. M. the pulse was 80, and she was bled from the arm, to the amount of four ounces, without any effect.

At 10 P. M. I first saw her. She lies in bed, inclined to the left side, her limbs all relaxed and mouth open. The mouth and nose are drawn a little to the left, and the tongue lies partly between the teeth on that side, carried there apparently by its weight. Eyes very nearly closed, motionless; no sensibility evinced on touching them; axes equal. Right pupil contracted, left dilated, both immovable. Respiration regular, stertorous, 36 in a minute, with some rattling. Pulse 94, very hard. Pulsation of carotids very hard, the artery hardly yielding at all between the beats. Skin temperate; no unusual moisture. Does not swallow. A spoonful of water poured into mouth produces much embarrassment to respiration for one or two minutes, and partly runs out of mouth. Ice applied to head; and sinapisms to legs, to be renewed in different parts every two hours.

At 11½ P. M., by advice of Dr. John Ware, patient got an enema of warm water, with ol. terebinth. ℥j; and a mixture was placed upon her tongue of ol. tiglii gtt. v; ol. olivæ ʒj. Ice was discontinued.

Oct. 15*th*, 8¾ A. M. Had two enemata, which were not discharged. Was much the same through night. Urine flowing all night. At 4 A. M. she vomited some pieces of food, which the nurse removed from her mouth. These seemed to be hardly altered by digestion. Since that time she appeared to fail, breathing becoming more oppressed. Now lies as last evening. Skin warm, except nose. Lividity of arms; no other part seen except face. Pulse 140 to 146, feeble. Respiration more rapid than before, somewhat irregular, laboured; cervical muscles acting strongly, and larynx being forcibly raised at each inspiration. The lower part of each conjunctiva is exposed, and considerably injected. The upper limit of this congestion is marked by a straight line produced by the edge of the upper lid. This line runs across the cornea; and that part of the iris which is uncovered by the lid has taken a different colour from the rest. The pupils have somewhat changed, the right one being larger than it was last evening, and the left smaller. While I was standing by her, her respiration became more irregular and laboured, and she appeared to choke. I removed some pieces of food from her mouth, but the respiration did not improve. It became more gasping, and occurred at longer intervals. Her skin, lips, and conjunctiva rapidly blanched; the pulse became nearly imperceptible; the pupils became dilated equally to a very great size, and in five minutes from the decided change in the respiration, she was dead, without any motion, and without having exhibited any appearance of consciousness or sensibility since her attack, fifteen hours previously.

She died at 9 A.M.

Autopsy, 25 hours after death.—Rigor mortis very strong. Posterior parts of body deeply discoloured. Moderate amount of fat under skin.

Head.—About ℥ss of blood flows on the separation of calvarium from dura mater. Longitudinal sinus contains a little blood. Dura mater normal. Arachnoid dry; no fluid underneath it. The large vessels of pia mater full of blood; the small ones less so. The brain preserves its position well. Convolutions on both sides are flattened to a very great degree. The substance of cerebrum is generally of firm consistence, and not very vascular. The lower half of the left hemisphere contains a coagulum, amounting probably to ℥iij. It is contained in a cavity with ragged, soft walls, mottled with blood to the depth of half an inch, and softer than natural, to the depth of nearly an inch; nearly diffluent within, and growing generally harder as the normal portion of the brain is approached. The clot is of uniform dark red colour, and soft except in the centre, where there is a small portion very firm. The thalamus opticus and corpus striatum of this side are partially destroyed by the clot, and the remainder of their substance is soft, but preserves its form. The lateral ventricle of this side is smeared thinly with blood, and in its posterior horn are from one to two drachms of fluid blood, and a free opening into the apoplectic cavity. The right lateral ventricle had been previously opened, and discharged ℥iss or more of clear serum, bloody towards the last. The septum lucidum was partly broken. The fifth ventricle contains a little blood. The third and fourth have none. The plexus choroides are somewhat injected. The ventricles are otherwise normal, except that there is a malformation of the middle commissure: there being two commissures, each one of the usual size, with a space between, which admits a probe. With the exceptions already stated, the brain and the medulla oblongata are perfectly normal. The arteries at the base have a few spots of thickening, but of inconsiderable extent. In taking out the brain, a clot as large as a small pea was observed in or upon the pituitary gland, but it was afterwards forgotten. Portions of the brain, including some of the walls of the apoplectic cavity, were examined under the microscope, but without satisfactory results. No alteration of the vessels was seen, but Dr. Dalton did not consider his examination as conclusive. None of the crystals of hæmatin were found in the clot.

Chest.—There is partial ossification of all the cartilages of the ribs. Pericardium normal, and contains less than ℥ss of serum. Heart firm, rather large. Right cavities contain considerable blood, the left very little; coagulated, uniformly red, and not firmly adherent. The mitral valve, and the aortic valve nearest to it, have several spots of yellowish deposit underneath the lining membrane; not enough, however, to impede their action. The left ventricle is very firm and hypertrophied. Its thickness is,

At the base, . .	$\frac{11}{16}$ inch = more than 8 lines.	
At the middle, . .	$\frac{11}{16}$ inch =	"
One inch from apex, .	$\frac{1}{2}$ inch =	" 6 lines.*

The remainder of the heart, including parietes, membranes, and valves, appeared normal; but no measurements made. The aorta for two inches from its origin is normal, but is seen no further.

Pleura entirely free from adhesions, and contain very little fluid. The lungs crepitate everywhere; contain considerable fluid; are full of blood at the posterior parts. The apex of each lung is somewhat puckered on the surface, but has no condensation, nor tubercle underneath.

Abdomen.—Peritoneum normal. Stomach and intestines distended with gas. The stomach has a pint or more of fluid and some large masses of peach, with skins. Its mucous membrane is everywhere rough with elevated follicles, white, less than a line in diameter, very numerous and distinct. No unusual vascularity, no thinning of the mucous membrane; but a moderate degree of softening at the left extremity. The small intestines contain, besides gas, many solid masses. They were opened in only one place, to discover the nature of the contents, which proved to be fecal. The lacteals cannot be discovered, except at two or three spots, where a drop of chyle serves to display half an inch of their length. Mesenteric glands normal.

Liver normal. Gall bladder half full of bile; no concretions. There are some old adhesions of areolar tissue between the gall-bladder and the transverse colon. No communication between their cavities.

Pancreas normal, but rather small.

Spleen quite small, pale, and dry. It has a cyst under investing membrane, containing ℥ss of clear fluid. In the lower wall of the cyst, which is thicker than the outer one, is a small extravasation.

Kidneys thin; left larger than the right; nothing abnormal about them, except a cyst under investing membrane of the left, containing ℥j of serum. Ureters normal. Bladder normal; contains about Oj of urine.

Ovaries of natural appearance, containing together eight corpora lutea of different sizes, the smallest being a yellowish spot, no more than a line in diameter; and the largest nearly half an inch in diameter, with yellowish walls, containing a red clot. There are also two large Graafian vesicles in the left ovary, quite prominent, one of them covered only with peritoneum.

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* The average thickness of the left ventricle in the healthy female, according to Bizot, is,

At the base, ...	about 4$\frac{1}{3}$	(English) lines.
At the middle, ...	about 4$\frac{4}{5}$	"
Half an inch from apex, . .	about 3$\frac{1}{2}$	"

My third measurement cannot be compared with Bizot's, as it was made half an inch farther from the apex. The others show a thickness nearly double that of the normal standard.

The uterus is quite large, being 3½ inches in length, and 2½ inches in breadth. Its walls are thick in proportion, but natural in texture. Its internal surface rather pale, quite soft, and for the depth of two lines consisting mostly of epithelium.

Remarks.—In reviewing the case, the idea occurs that, although the attack was severe, death was *insured* by the administration of an emetic, a mode of treatment that was once practiced, but which received the condemnation of Morgagni more than a century ago.

Blood-letting has within a few years been looked upon as a treatment of doubtful efficacy. When used, the established practice has been to employ it very freely, or until a decided effect has been produced upon the system; small bleedings, according to Abercrombie, doing more harm than good. Taking the recorded cases, and what I have seen for a criterion, it appears very doubtful whether patients have recovered more readily under the use of blood-letting than when it was not used.

In addition to this case, I will present a synopsis of four cases which occurred at the Massachusetts General Hospital; these being all the cases in the hospital records which are accompanied with post-mortem examinations.

In every case, there was a sudden but partial loss of consciousness, and perfect or partial hemiplegia. In every case there had been premonitory symptoms, consisting of dejection of spirits, vertigo, headache, momentary loss of consciousness, drowsiness, incoherence, or temporary numbness. These symptoms had occurred in two cases, only three or four days before the apoplectic seizure; in the other two from three to six weeks previously; but were not continual in any. In all the cases, the patient could be roused at any time, until within a few hours of death. The length of time from the attack until death was two and a half, four, nine, and twelve days, respectively; and death occurred without convulsion.

In the character of the lesions, there was a remarkable correspondence in the four cases. In all, there was very great extravasation of blood (from ℥iss to ℥iij) into one cerebral hemisphere, involving the thalamus opticus and the corpus striatum, or one or the other alone; and in three of them bursting into the lateral ventricle. In every case there were softening and staining of the surrounding medullary matter; in three cases, to the depth of a few lines; in the fourth, nearly to the surface of the cerebrum.

All the subjects had more or less ossification of the aorta, the falx cerebri, or the cartilages of the larynx and ribs. None had any ossification of the cerebral arteries. In the youngest subject (æt. 40), there was advanced ossification of the anterior part of the falx cerebri, but none anywhere else.

Three had marked hypertrophy of the left ventricle of the heart. These were 63, 69, and 70 years old, respectively. The heart of the fourth (æt. 40) was normal in every way. This patient had a strong hereditary predisposition to the disease, his mother and two uncles having died of "palsy." No statement was made in regard to the family history of the others.

Before going any further, I wish to call attention to the want of agreement in the case first related and the last four cases. In all of them, the lesions were nearly equal in extent and of almost precisely similar situation; yet the first case was one of complete coma from the outset, and death occurred in fifteen hours; while the remainder were never attended with total unconsciousness until a few hours before death, and were of much longer duration. That so great a difference is due to a certain cause cannot be doubted; a cause, however, which does not give any evidence of its existence that is appreciable in our anatomical investigations. The autopsy of the case reported does not justify us in thinking that it arose from greater suddenness in the effusion than occurred in the hospital cases; for there was pretty good evidence that the effusion did not all occur at once, the centre of the clot being notably firmer in a well-limited portion than that which surrounded it—a fact which was not noticed in the hospital cases. The differences illustrate the statement which Abercrombie makes: that there is no constant correspondence between the extent of the injury received by the brain and the symptoms which attended it—an opinion confirmed by Andral's cases. It is not to be forgotten that here, as in many other diseases, the lesions which are evident to our senses are not all the pathological changes that take place: if we should neglect to take into consideration the functional disturbances which a slight lesion may produce, many of our discoveries after death would appear quite insufficient for the production of the symptoms which brought about the fatal issue.

Andral, in his *Clinique Médicale,* reports seventeen cases of apoplexy, in all of which the state of the brain around the clot is described. In five old cases in which the clot had been surrounded by a membrane, and partly or wholly absorbed, the brain around the cyst was either of normal consistence or somewhat hardened. There was only one other case of sufficiently long standing for the production of a cyst; this was of six months' duration, and presented an organized membrane, with softening of the circumjacent substance for a depth of four or five lines. But the softening in this case was clearly of secondary occurrence, as appeared by the symptoms three months after the apoplectic seizure (Case 7). The cyst was formed in all the cases but one, in which the attack dated more than a year previously, and in one case of six weeks' standing; and in the case (of thirteen months' duration) in which there was no cyst, the surrounding brain was still soft, while the hemiplegia was subsiding, and death was produced by tubercular disease (Case 10).

In seven cases, there was softening of the brain around the clot to a depth varying from two to six lines in the different cases.

In four cases there was no softening around the clot. Two of these had only very slight effusions, being from two to four lines in diameter. One had a clot as large as a small nut, and one as large as a pullet's egg. In all of these, death took place within nine days from the attack.

In eleven cases of apoplexy with extravasation, related by Abercrombie, the condition of the brain surrounding the clot is mentioned in three only. In these it is described as softened and broken down around the apoplectic cavity. In two of them, the attack was entirely without premonitory symptoms. In the third, there had been headache for several days.

Taking, therefore, our thirty-three cases, we find sixteen in which the cerebral substance around the clot is described as softened. Eight of the remainder had no account of the consistence of the brain. The five cases in which the attack took place at a long period before death may be fairly excluded from the list, on account of the change which probably occurred in the interval. Four cases only remain, in which the brain was of healthy consistence.

In consideration of these results, I think it may be safely stated that the portion of the brain which forms the parietes of apoplectic cavities is almost invariably softened and broken down.

Attention is called to this point, for the purpose of inquiring what is the probable condition of the brain before the apoplectic attack? Can it be, as some writers have supposed, that the softening is a condition of earlier date than the extravasation? That the premonitory symptoms, which in some of these cases have existed for several months, are indications of this state of the brain?* If so, how are we to dispose of the cases in which we find the same degree of softening, but in which the apoplectic symptoms occurred during apparent health, of which I have presented some cases, unless we can show that softening may exist to a very great extent, involving even the thalami optici and corpora striata, without producing any symptoms? And, on the other hand, we have many cases of fatal softening of the brain, sometimes even to diffluence, and some of them of long standing, in which no hemorrhage took place. It seems most probable that whatever cause may operate, in ordinary cases of apoplexy, to produce the extravasation of blood, it is *not softening of the medullary substance;* but that this is produced by the violence of the effusion. This view is taken by Dr. Craigie, and perhaps by other writers. In this opinion, it will be understood that inflammatory softening is not included; the extravasations which occur in cases of that kind being usually limited to a small part of the softened portion, thereby indicating a different cause for the effusion. It will be observed that, in all the cases but one to which I have referred, the softening has been of nearly the same depth, hardly exceeding six lines around the clot, and being uniform in degree and depth on all sides of it. I have found, as has been already said, four exceptions to what appears to be the usual condition around the clot, four cases in which there was no softening, indicating that the effusion does not always produce mechanical injury of the brain around it. In three of them, the clot was very small (2, 4, and 8 lines in diameter, respectively), which may be a sufficient reason for its absence, inasmuch as there are no cases which presented softening around the clot, in which the clot was so small as in two of them. In the fourth case, however, the effused blood was as large as a pullet's egg, a size which does not admit of the same explanation.

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* Among all the symptoms which have preceded apoplectic attacks, I find no case where there were *muscular contractions*, a symptom which occurs in more than half the cases of simple softening of the brain.

The consideration of the possible causes of apoplexy gives me an opportunity to allude to some very interesting observations on the condition of the minute vessels of the brain, in cases of this disease. They are published in the "London Medical Gazette" for February, 1850, by Mr. Paget, who has found these vessels to undergo a fatty degeneration. He says, "In the last degrees of the disease, the only apparent change of structure is that minute, shining, black-edged particles, like molecules of oil, are thinly and irregularly scattered beneath the outer surface of the small blood-vessels of the brain. . . . . . As the disease makes progress, the oil particles may increase in number, till the whole extent of the affected vessel is thick-set with them, and the natural structures, even if not wasted, can hardly be discerned. . . . . . The vessels most liable to this disease are, I think, the arteries of about $\frac{1}{300}$th of an inch in diameter; but it exists, at the same time, in the veins of the same or of less size. . . . . It is not rare, however, to find vessels from $\frac{1}{2000}$th to $\frac{1}{3000}$th of an inch in diameter, having part of their walls nearly covered with the abnormal deposits. . . . . The fibrous coat of arteries, and the corresponding layer in veins, is the principal and first seat of the deposit; but in an advanced stage, it is seldom that any of the several coats of a blood-vessel can be assigned as its chief seat; for even in large four-coated arteries they wholly waste, and their remains appear united in a single pellucid layer, of which the whole thickness may be occupied by the deposit. . . . . . The fatty degeneration affects alike the vessels of the healthy, the broken and the softened portions of the brain; but the vessels of the healthy portions are affected in a less degree than those of the others." He further says, in his examination of one of the cases, that "several portions of yellow fatty deposit existed in the walls of the branches of the arterial circle of Willis." In the case first reported in this paper, there was a deposit in the arteries at the base of the brain, apparently similar in character to this mentioned by Mr. Paget; but it was not placed under the microscope.

Although Mr. Paget's observations have not been very numerous, he is induced to say that "this fatty degeneration of the blood-vessels of the brain may be suspected to be the ordinary precursor, or even the immediate predisposing cause, of cerebral apoplexy."

CASE II.—*Cerebritis (Inflammatory Softening, with Effusion of Blood); Caries of Hip-Joint after Dislocation; Tuberculosis.*—A seaman, æt. 35, while suffering with rheumatism, as he reported, but able to walk about, in the middle of August, 1850, fell a few feet, striking the middle of left thigh against a box, as he thought. He was under treatment for the first time about two weeks after the injury, at the Chelsea Marine Hospital. Dr. Ingalls found him, on the 2d of September, to have the left limb two inches longer than the other, and the foot and knee carried forward outward in standing. The diagnosis was of dislocation into the foramen ovale. Reduction was then attempted, and was partially successful, the difference in the length of the limbs being considerably diminished. The patient has, however, been unable to use the limb, having been confined to his bed from that time. For some time past, has been obliged to have his shoulders much raised, on account of severe pain in the hip-joint, which was aggravated by the horizontal posture. He has also suffered considerable dyspnœa, which has increased the difficulty of lying down. Has had a little cough, with very slight expectoration.

Two weeks before death, began to lose the use of right arm, and soon afterwards the right leg was in the same condition. At the same time, he appeared stupid, but made no complaint of head, and special senses were not particularly affected. Five days before death, his stupor became much greater, so that, although he could be roused, he did not comprehend anything that was said to him. His left side became paralyzed; he grew steadily worse; and for the last three days of life he was perfectly comatose, with involuntary discharges of urine and feces. His pupils were then much dilated, but there was no strabismus nor other alterations of eyes. On the last day of life, there were frequent convulsions of right arm and leg; and for the three days before death there was frequent forcible contraction of upper lip. Death occurred three and a half months after the dislocation.

Autopsy, 25 *hours after death*, November 30, 1850—Thermometer 40° to 45° Fahr. Moderate emaciation. Œdema of left foot and leg, and of right in a much less degree.

Head. Scalp absolutely bloodless. Dura mater normal. Arachnoid has a little serum underneath it, on each hemisphere; on the right it has slightly opaque spots; on the left over the vertex, there is a considerable deposit of lymph underneath it, extending from the longitudinal fissure outwards about two inches, and from before backwards about three inches. This fills up the sulci of the convolutions, gluing them together. The pia mater on the perpendicular face of this hemisphere in the longitudinal fissure has a similar effusion of lymph, and the opposite hemisphere, where it lies against this, has a slight effusion under arachnoid, but not extending between convolutions. The condition of the falx was not examined. In attempting to raise the arachnoid and pia mater on the left side, it separates pretty readily—the lymph being soft—except at one spot near the median line, where a little of the cerebral substance comes away with it, on account of being very soft. A transverse incision through left hemisphere, taking off a slice half an inch in thickness, displays (just where the brain was torn up) a reddish-brown mass three-quarters of an inch in diameter, surrounded with deep red, and that again with yellowish-white, dotted with deep red points. This portion is very soft, the brown being so soft that a gentle stream of water would probably wash it away, but grows less soft on reaching the red. Just anterior to this is another focus of deep red points, forming in the centre a cluster of pure red, gradually disappearing in single points at the circumference. Around both these foci the brain is of a light orange colour, gradually fading into the white. The whole of the yellow and red is soft, but much less so than the brownish portion. The posterior brownish mass extends with the same characteristics for about an inch downwards, then becomes red, then yellowish with red points, until at the surface of the lateral ventricle it is pure yellowish, and more soft than natural. The anterior red portion does not extend so deep. The cortical portion in that part of the brain which is softened is very pale; near the central part of the diseased structure it is hardly any darker than the medullary portion, and can be seen only for the thickness of half a line. Although quite distinct elsewhere, it is not in either hemisphere so dark as natural. The left lateral ventricle is of normal consistence and appearance, except at the small spot already described in its upper wall; it contains less than ʒj of serum. The remainder of the left hemisphere, and the whole of the right, are normal. Commissura mollis firm. The right lateral ventricle has less than ʒj of serum. Except over the convexity of left hemisphere and in longitudinal fissure, the membranes are normal and free from lymph and serum. No pus anywhere. The diseased portion of the brain with the effused blood, examined under the microscope by Dr. Dalton, showed blood-globules in considerable abundance; portions of broken-up nerve tubes; translucent, highly refracting, claret-coloured, irregularly-shaped, crystalline masses of small size (hæmatin).

Chest.—The whole of left lung and the upper half of the right nearly filled with a grayish tubercular deposit, with several small cavities in each upper lobe; no pus. The pleura almost universally adherent by old membranes. The pericardium contained nearly ℥iv of serum. The heart flabby; was removed entire for preservation.

Abdomen.—Stomach normal. Intestines apparently so; but were not opened, for want of time.

The liver is of a uniform bronze colour (as in remittent fever), but not softened.* Spleen about twice the natural size, dark and soft.

Kidneys normal.

Hip.—There is phlebitis of the left vena profunda femoris, from the femoral vein downward about seven inches—traced no further. Immediately over left hip-joint, there is a sac about the size of the forefinger, with a thick lining containing yellowish, broken-down lymph, with a little purulent matter. On its posterior side is a small opening into the joint. On opening the joint the head of the femur is found directed forward, and the trochanter major directly backwards, from the laxity of the ligamentum teres (this being about one and a quarter inches long). The synovial membrane has a coating of lymph, varying in thickness from that of a serous membrane to masses of several lines; down upon the neck there are large loose bands attaching the opposite surfaces. That which covers the articular cartilages, has very little lymph. The cartilage over the head of the bone, has several depressions, like cicatrices; and one ridge two or three lines high, as if from effusion underneath. The ligamentum teres is firm, but surrounded with lymph, underneath which there is deep congestion, and particularly at its attachment to the acetabulum, from which it can be easily separated. The articular cartilages are very easily torn off, bringing minute spiculæ of bone with them, leaving the surface red, rough and soft—so soft that it can be cut with the finger nail. No pus nor synovia in cavity of joint.

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* Since patient's death, I have learned that his voyages, during the few months immediately before his attack, were between Liverpool and Boston. Whether he had had fever, I cannot learn.

Case III. *Simple Softening* (*Ramollissement*) *of the Brain.*—J. P. æt. 68, a thin man, of sallow complexion, had been in active life to the age of fifty, acting chiefly as supercargo or in some similar capacity in the East India trade. About eighteen years ago, he studied theology, and was settled as a minister in Ashfield, Mass. About 1845, he considered himself incapacitated for further service, on account of feeble health, and has since resided in or near Boston, a pensioner of the Episcopal Church.

He was first seen by me in the autumn of 1847, when I admitted him to the Mass. General Hospital, on account of chronic ulcers on the shin. His manner of living at that time undoubtedly influenced his health injuriously. He was shut up in a small room warmed by an air-tight stove, and rarely went out. He spent most of his time in bed; took only one meal a day, which consisted chiefly of bread and tea or cocoa. He rarely saw any one, having few friends in the neighbourhood; and he appeared like a superannuated man who took no interest in anything but his leg. His circulation was very sluggish, and the leg was attacked with occasional congestions, sometimes resulting in sloughs. He left the hospital after six months, with his leg quite well, and with much more vigour than he had had for two years before. He took lodgings in the city, and until the last six months, has been in the habit of walking out, sometimes a mile or two at once. He has been frequently troubled with dyspepsia. He has had ulcers on one or the other leg at times; but they have pretty readily healed. For eight or nine months past, he has had an ulcer on left leg, with hardly any intermission. He has treated it himself, with water, warm and cold, poultices, simple cerate, &c. For several months he has not left the house.

Two weeks ago, the landlady began to perceive that his leg was offensive, and since that time he has not left his chamber, and has spent the nights in his chair (the landlady thinks, for fear he should not rise again if he went to bed). I have not seen him for many weeks. The housekeeper states that he always eats enormously and of a great variety of articles, particularly a large quantity of butter. That he was in the habit of getting some exercise by pumping water for fifteen minutes daily until the last two weeks; that since that time, although this daily exercise and all other has been discontinued, he has eaten as heartily as ever.

The housekeeper spent part of the last evening with him, when he appeared unusually well and cheerful.

This morning, *August* 10*th*, 1850, the maid went into his room between seven and eight o'clock, and found him nearly insensible in his chair. She spoke to him, when he turned his head towards her and uttered some unintelligible sound, upon which she called her mistress, who found him quite insensible.

I reached the house at 8 A. M. and found Mr. P. sitting in an arm chair, with head back, his feet upon another chair, his left knee drawn up and resting on a pillow, his right hand grasping the arm of the chair, his left hand also somewhat contracted. Eyes closed; pupils very much contracted and not affected by light. Respiration natural. Pulse rapid, very full and like a hammer. On being spoken to, opens eyes for a moment, but shows no other sign of intelligence. Being obliged to go away immediately, I left him in charge of Dr. Williams, with the request that he would apply ice to his head and hot bottles to his feet, and take blood from his arm p. r. n.

At 9½ A. M., I saw him again. He had lost ℥viij of blood, when the bleeding was stopped, as there was some improvement in his appearance—both increase of intelligence and softening of the pulse. Considering the age and debility of the patient, Dr. Williams preferred not to bleed any more. Pulse now less hard and full, 110. Pupils same. Skin warm and moist, except of lower extremities. Exhibits more intelligence on being spoken to, grasps my hand slightly, opens his eyes and shakes his head a little. Soon after being roused, falls into stupor, with slightly stertorous breathing, and lower jaw falls; but on being again aroused, closes mouth, partly opens eyes and breathes quietly. There is no distortion of face. Arms not paralyzed; sometimes raises one of them when flies are on his face. Swallows a part of liquid which is put into his mouth.

1 P. M. Much the same. Pulse 103. Occasional twitching of flexors of fingers.

5 P. M. Has lost ground. Lies as before. Pulse 110, same character. Pupils same. Skin warm and moist, greasy in feeling. Inspirations regular, somewhat spasmodic. Starts and opens eyes a little, when addressed in a loud voice, but immediately relapses into unconsciousness. We lifted him on to the bed, and being able to examine him more thoroughly, find rigid contraction of the flexors of his forearms and hands—his forearms forming an angle of about 75° with his arms, and his fingers being closed. His head was drawn rigidly backwards. The right thigh was nearly straight; the left

thigh and leg were much flexed (this was a position apparently assumed last night for ease to the lame leg). The lower extremity was extended by steady force, and remained so, but with continued rigidity of muscles. Respiration in front noisy, by sound apparently transmitted from throat—with some roughness, as if from mucus. No distinct râle. There is no impulse felt over heart and the sounds are indistinct.

11*th*. Has not aroused, and cannot now be affected by any stimulus, either of voice or touch. Respiration 11, irregular in rate and force: most of inspiration being full and stertorous, with occasionally some very slight and quiet. Left leg drawn up as at first, and when extended soon returns. Ulcer examined, and found to be enlarged by a slough, not yet separated, which is very offensive. Ulcer may be washed with liq. sodæ chlorinatæ dilutus.

12*th*. As yesterday. Violent twitching of left leg followed the wash. Pulse 110, in character as before. The left pupil has become dilated to the natural size; the right remains contracted. They are immovable, and the eyes are not affected by the touch; the conjunctivæ are covered with mucus. Occasionally slight twitching of eyelids. Does not swallow.

Evening. Pulse much smaller, 132. Respiration as before. Occasionally groans and closes jaws for a moment. Has not aroused at all. Left pupil has become unnaturally large. Right pupil nearly as before.

He continued to sink, and died at ten minutes before 11 P. M., without convulsions. He had no dejection after his attack. It was not known that he had passed any urine. His skin had been covered from the first, with viscid sweat.

Autopsy, 11 *hours after death*.—The lower extremities are moderately rigid. The upper have been moved. Moderate emaciation of body generally, but over abdomen there is more than an inch of fat. Muscles of pretty good colour.

Head.—Scalp quite bloodless. On raising calvarium, ℥ij to iij of fluid escapes, apparently from openings made in the membranes by the saw. Longitudinal sinus empty. Dura mater and arachnoid normal, but pia mater infiltrated with serum, which raises arachnoid to a great degree. Convolutions of cerebrum are thin and separated, and on the right side near the median line is a depression large enough to hold a filbert. Two ounces of fluid were caught here, and ℥iss more at the base, which, with that which escaped at the removal of the calvarium, amount to at least ℥vss under the arachnoid. The lateral ventricles contained ℥iss more. The substance of brain is unusually vascular, but of good consistence and normal appearance, except in the left corpus striatum. A considerable part of this with the medullary matter next to it on the outerside, is decidedly softened. It is not diffluent. There is no alteration of color or effusion of blood. In the midst of the softened portion is a small cavity, two lines in diameter, without lining membrane or alteration of colour. It may have held serum, but as soon as it came to view was empty. It looks as if it were just now scooped out of the substance of the brain. The softening extends through the corpus striatum from top to bottom; in a transverse section is seen only in the outer half and extending a little way into the hemisphere; and in a vertical section from the anterior to the posterior part, is seen chiefly in the middle of the corpus striatum. Every portion of cerebrum and cerebellum were carefully examined, and nothing else abnormal found. The vertebral and basilar arteries are thickened and rigid in several portions; the whole of the vertebral from the points where they enter the spinal canal are more rigid than usual, not collapsing at all; but no ossific matter is seen. No lymph or pus in any part of cranial cavity.

Chest.—The heart is normal in every respect. Aorta smooth and free from disease for seven inches from heart. Not examined further.

The thymus gland is large enough to weigh an ounce, and of natural appearance.

The lungs contain much fluid, most at posterior part. At the right apex there is an old empty cavity as large as a hen's egg; and at the left apex tubercular remains. No tubercles, nor other alteration. There are old pleural adhesions, chiefly on right side. Little fluid in pleura or in pericardium.

Abdomen.—Peritoneum normal. Stomach contains half a pint of fluid, and some currants; is not unnatural. Intestines appear well externally; not opened. Mesenteric glands normal. Pancreas not examined.

Liver rather small; full of blood; not abnormal. Spleen rather large, normal, except for a thick white appearance of part of the capsule.

Kidneys loaded with fat to an unusual degree. Both very small, by atrophy of the cortical portion. The surface of the right kidney is irregularly nodulated, the elevations being small, with a somewhat granular appearance, and deeply injected everywhere. From one part of the surface rises very abruptly a portion as large as a dime, about two or three lines above the rest of the kidney, and looking like a fungus. This is softer than the rest of the organ, and can be easily scraped out with the scalpel to the depth of half an inch. Its colour is the same as that of the rest of the kidney, which is a deep red. The left kidney is like the right, but less injection. Both of them are of natural consistence.

Under the microscope, examined by Dr. Dalton, the projecting soft portion appears natural, showing extremities of tubuli, with epithelium of normal size and no unusual structure; but the rest of the kidney appears to have its tissues much contracted, and its epithelium is small.

Bladder contains ℥ij to iij of urine; not opened.

The three cases here presented illustrate clearly the pathological difference between the softening of the brain, which takes place around an apoplectic effusion, and that which occurs under other circumstances.

Art. VI.—*Extracts from the Records of the Boston Society for Medical Improvement.* By Wm. W. Morland, M. D., Secretary.

Jan. 27.—*Ulceration of the Cœcum.* Dr. Storer reported the case.—Early in December last, Dr. S. was called to visit Miss L., aged about twenty-five years. She complained of great pain in the right iliac fossa, and was suffering from considerable constitutional excitement:—Upon examining the part affected, he found it tumefied from about two inches anterior to the crest of the ilium, to some distance backward upon its spine; this tumefaction was exceedingly sensitive, and pressure upon a portion of it detected fluctuation. Dr. S. ascertained that she had taken a long walk a week or two previously, when the ground was damp, with thin shoes—and, that at that time she felt chilled;—immediately after this exposure, she began to complain of uneasiness in the affected part, and her suffering had, since, constantly increased. The abscess was punctured, and egress given to several ounces of exceedingly offensive, ill-conditioned pus, together with a small portion of air: great relief was immediately experienced. The purulent matter continued to flow, unmixed with any foreign substance, until the third day after the opening was made. At this time, Dr. Storer noticed three or four small black masses about the size of an ordinary pea, looking like little scybala, and the patient told him, that during the previous night she had been disturbed by the passage of air from the orifice. On the fourth day, liquid fecal matter flowed freely from the wound—this continued four or five days, requiring that dressings should be applied repeatedly during the day. From this period, nearly five weeks elapsed without the passage of any fecal matter, the discharge being entirely purulent, accompanied occasionally by air. At the termination of a month, the patient, having complained for a day or two of local heat and fulness, together with general febrile excitement, observed in the purulent discharge from the wound, quite a number of fig-seeds, which had been swallowed a fortnight previously. Succeeding the passage of these seeds, a long, somewhat compressed substance was observed in the aperture of the skin, which proved to be a portion of apple-peel, several folds of which had become rolled upon themselves, forming a fine, pointed body. Fecal matter followed these foreign substances, and continued to flow for four days, and then gradually subsided.

March 10*th*.—No fecal matter has passed during the last seven weeks—air has, however, repeatedly, until the last week;—the bowels are regular, and her general health much better than it was previous to the formation of the abscess; a slight purulent discharge alone continues to flow.

Dr. J. B. S. Jackson asked, if tuphlo-enteritis had been suspected as the cause of the phenomena in the above case? Scybala had been discharged, at first, from the wound, and it is known that these have sometimes been the cause of inflammation, &c., in the appendix cœci.

Dr. Storer replied, that the discharge of fecal matter from the wound had been *profuse*—he did not refer the case to tuphlo-enteritis.

Jan. 27.—*Application of Collodion as a preventive of Pitting, in Variola, and its use in cases of Mammary Inflammation.*—Dr. Storer remarked that he had used collodion in one case, within a short period, successfully. The patient was very ill with small-pox; upon the appearance of the pustules, those upon the face were brushed over, two or three times daily, with the above liquid, until the period of desquamation. The patient, upon recovery, exhibited no pits upon her face.

Dr. S. observed that, Professor Evans, of the Rush Medical College, had reported several cases, during the past year, in one of the Western Journals, in which he used collodion, advantageously, in *mammary inflammation;* suppuration was prevented in most of the cases, and relief obtained in all. His object in applying this remedy, was to obtain a contraction of the parts; supposing that thus, the freedom with which the blood is forced into the mamma, would be overcome, and the lymph absorbed by compression.

Dr. S. had tried Prof. E.'s plan in three cases, but had not observed any decided effect from the application; he is unwilling, however, to venture an opinion upon its value, without further experience.

Dr. Bowditch testified to the efficacy of collodion in the prevention of pitting from variola.

Dr. Abbot supposed it to act by its *constrictive* property, compressing the blood-vessels around the pustules, and thus diminishing the formation of pus. With this view, he had applied it, in his own person, in threatened paronychia, with success, the inflammation being completely arrested.

Dr. Bowditch, referring to the apparent effect of *pressure* in preventing inflammation, mentioned a case of peritonitis, where the pressure made by the intestines upon each other seemed to arrest the diseased action, no inflammatory blush being observed between the intestinal convolutions.

In another case, where the *liver* had pressed upon the *stomach*, the portion of the latter viscus thus situated was quite *white* and entirely uninflamed, while the rest was much affected.

Dr. Jackson said he had often noticed similar facts, but had never, previously, thus accounted for them. He thought the effect of compression evident.

February 10.—*Loss of the Power of Articulation.*—Dr. Bigelow, Senior, related the following cases:—A female who had amenorrhœa, suddenly lost the power of articulating words; she could protrude the tongue and utter sounds, and even sing a tune, but, for more than a week, made no articulate sound. At the end of two weeks, by strongly fixing the attention, she could utter some words; even now, she speaks but slowly. Dr. B. considers the affection, in the above case, analogous to *stammering*, and wholly nervous.

The other case mentioned, was that of a man about thirty years of age, who came to the Massachusetts General Hospital, complaining of pain in the lumbar region, extending to the right hip and thigh, resembling sciatica. Large doses of aconite and colchicum relieved the pain, and the patient seemed convalescent. Catarrh, with slight febrile disturbance, ensued. About one week since, he suddenly lost the power of articulation, during the night; in the morning, on being questioned, he was unable to reply; he could protrude the tongue, and motion of other muscular parts was preserved. On the following day, difficulty of moving the hands and arms came on; at present, the hands are nearly immovable; the legs movable; he has vertigo, tinnitus aurium, and imperfect vision. In this case, Dr. B. apprehends more serious, and cerebral, difficulty. Dr. B. had previously reported to the Society the administration, by mistake of a nurse, of an over-dose of the tincture of aconite to this same patient; the *strong* tincture having been given in place of the *weak*, which was ordered. Nausea, dizziness, numbness, dryness of the fauces, loss of muscular power and of vision, followed its use, in the dose of six drops.*

Dr. Shattuck, Jr., stated the case of an apothecary connected with M. Louis' Hospital, in Paris, who lost the power of articulation after taking Cannabis Indica; the inability continued for four days; he then recovered the power of speech as suddenly as he had lost it.

Dr. Coale mentioned a case of *embarrassed* articulation, occurring in a gentleman whom he supposed affected with intestinal obstruction; the patient was *hysterically* seized at times; violent convulsive movements occurring; strong spasm of the lingual muscles caused the tip of the tongue to turn upwards at right angles whenever he attempted to speak. Dr. C., regarding the affection as a purely nervous one, directed the patient to apply undiluted brandy to the tip of the tongue, on the access of the spasm—the brandy being applied by the patient's finger, he holding a wineglassful of it in his hand whenever he wished to speak, as not more than a dozen or two dozen words could be spoken without the occurrence of the lingual spasm, which was promptly arrested by this treatment. The affection lasted for thirty-six hours.

February 10.—*Case of Colic strongly simulating Pleurisy.*—Dr. Coale was called out of town at midnight to see an elderly lady who had been seized early in the previous afternoon with a chilliness and a pain in the side and upper part of the chest. Several domestic remedies—hot cloths, a "rum sweat," and hot drinks—had been used, but the pain increased until it was insupportable. Though a woman of much power of endurance and of self-resolution, her groans could be heard all over the house. She was found propped up in bed, inclined to the right side. The countenance expressed anxiety; groans continual; respiration 40 in the minute; pulse 80. The pain was referred to the seventh rib on the right, and running thence to the shoulder of that side and to the infra-clavicular depression. The mention of habitual constipation gave Dr. C. a suggestion that the affection might be caused by flatulence, more particularly as the pulse did not seem excited proportionably to such intense pain. Some castor oil was given, followed up by rhubarb; and there being no syringe at hand, a soap suppository was introduced into the rectum, an hour after the administration of the oil. Free stools, accompanied by much gas, soon testified to the correctness of the diagnosis, and gave relief to the patient. The notable points in this case are the total want of any symptom directly referable to the bowels, and the intense pain so high in the chest as the infra-clavicular fossa.

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* This patient died with general paralysis a few days afterwards. No autopsy allowed.

Feb. 24.—Fractured Vertebræ. Dr. S. D. **Townsend** showed the specimens.—The fourth dorsal vertebra fractured through its body, and also the spinous processes of the three next below it. The patient, from whom these were taken, received a blow from a "derrick," which first struck the *head*, then the *back*. He was instantly paralyzed from the diaphragm downwards. He lived seventeen days; a slough formed over the sacrum about the tenth day.

Feb. 24.—Intra-Capsular Fracture of the Cervix Femoris. Death from Intestinal Strangulation. Dr. J. M. **Warren** related the case.—A gentleman, 83 years of age, fell upon a carpeted floor, striking the right trochanter. He was taken up suffering severe pain. Foot everted and shortened half an inch. He was placed on the triple inclined plane, the foot supported by means of pillows and protected by a cradle. At the end of seven weeks he was able to move the leg without pain, and the foot was not disposed to evert. On the 30th of January he was seized with a pain in epigastrium, accompanied by vomiting. Pain relieved on 31st, but the vomiting continued at intervals until his death, which occurred on the 4th of February. During this period there was no pain on pressure over any part of the abdomen, and no tumour perceived. One evacuation, of a solid consistence, took place from the bowels, by means of enema, on the 2d of February. The urine was suppressed for 24 hours; afterwards, it was passed naturally.

On examination after death it was discovered that about eighteen inches of the ileum, in the neighbourhood of the cœcum, had passed through an aperture in the circumference of the omentum, apparently made by an old adhesion; all this portion of the intestine was black, but not in a state of gangrene, the strangulation being partial. The capsule of the hip joint being opened there issued a small quantity of dark-coloured blood. A fracture was at once seen passing transversely through the neck of the bone; the parts, however, were firmly interlocked, and it was only after efforts of forcible rotation were made that they partially separated. A portion of the periosteum, at the back part of the cervix, remained entire. The effects of the fracture were to produce a slight shortening of the neck of the bone, by the fragments being driven, as it were, one into the other, and an additional shortness of the limb, from the partial drawing up of the shaft of the bone, by muscular contraction.

Feb. 24.—*Testicle retained in the Groin. Extirpation.* Dr. J. M. WARREN showed the specimen.—The patient was 38 years old, and a small tumour had always been observed high up in the groin, which, from the absence of the testicle in the scrotum, was supposed to be that organ arrested in its descent. A year since, the tumour suddenly slipped farther down in the course of the inguinal canal, enlarged, and became painful, the pain extending into the abdomen, when the tumour was handled. On removal, the testicle was found in a disorganized state, enveloped in the tunica vaginalis, which was partially adherent to it.

Feb. 24.—*Rupture of the Uterus.*—Dr. CABOT reported the following case: E. S., about twenty-seven years of age, of light complexion and hair, good general health, and apparently well-proportioned, the mother of one child, born six and a half years ago, and which child, a male, weighed at birth eight pounds, was taken with labour-pains at twelve M., Feb. 18, which pains increased in strength until Dr. C. visited her, at ten and a half P. M. At that time the os uteri was dilated to the size of a dollar and was yielding; the bag of waters quite prominent; at eleven and a half P. M. the latter broke; about the usual quantity of liquor amnii was discharged; os uteri dilated to about thrice the size remarked on first examination. The head advanced under action of very violent pains, until it almost pressed upon the perineum. After one o'clock A. M., Feb. 19th, the head did not advance much, if at all, although the pains continued very violent, straining and expulsive, even when the patient was well under the influence of ether, of which, during the labour, she consumed ℥xx. The pains recurred at about five minute intervals. At about eight A. M., Dr. Storer came in to relieve Dr. Cabot for a time; there was no return of the pains after his arrival, but vomiting of a greenish fluid occurred, and, on examination, Dr. S. found a *knee* projecting directly beneath the abdominal integuments, in the vicinity of the fundus uteri. Patient's pulse small and fluttering; too frequent to be counted: previously, even while fully etherized, the pulse had been full and strong. Dr. Storer went for instruments, being confident that rupture of the uterus had taken place. On Dr. Cabot's return the perforator was applied to the child's head, which did *not* (as is usual in these cases) *recede*, previous to the application of the instrument, or at the moment of its application. The perforator was introduced with ease; forceps could not be used. The child (a female weighing seven pounds, exclusive of the brain) was extracted with great difficulty; the placenta followed immediately; the uterus contracted firmly and well, feeling hard and rounded under the hand, as usual after normal delivery. Opium and brandy were administered. At twelve o'clock M., patient complained of great pain in the abdomen; pulse too small and quick to be counted; countenance sunken; breathing very short and quick. Brandy and opium continued. 20th, has been quite free from pain since last evening, and has not taken opium since then. At six P. M., the pulse 135 and fuller; the catheter was used. 21st, pulse 115, fuller; nausea and vomiting; pain in abdomen, but no great tenderness; lochia sufficient, not excessive from the first. Catheterism; ordered calomel and opium. 22d, pulse 104, patient comfortable till towards night, when the lochia diminished; pulse 125; abdomen tender on pressure. Next day, pulse higher and tenderness of abdomen more marked. Calomel and morphia were administered, nearly every hour, until two A. M., Feb. 24th, when patient became perfectly easy, slept, and, on being waked, said she was "perfectly happy, but could not see;" she died at nine and a quarter A. M., five days from the time of her delivery. The lochia were profuse, the day before death, and looked like sanguinolent serum. At the *post-mortem* examination, made at four P. M., the following appearances were noted. On opening the peritoneum, a small quantity of bloody serum escaped; coagula between the folds of the intestines, moulded to their shape; an elongated mass of sebaceous matter lay, perfectly free, directly beneath the peritoneum, which membrane was somewhat inflamed throughout; slight adhesions observed. The uterus was found ruptured completely across the anterior wall of its cervix, just below the os internum; the organ measured five and a half inches in length, from the fundus to the os externum, and four and a half inches in width.

Dr. Cabot remarked that, the first point which attracts notice in this case, because an unusual occurrence, is the *non-retrocession of the head*, and the firmness with which it retained its position against the perforator; judging by these facts, some of our older and most experienced practitioners denied the accuracy of the diagnosis. The firmness with which the head had been driven and impacted into the pelvis, accounts fully, in Dr. C.'s opinion, for its non-retrocession, although he supposed at the time, and still thinks, that the uterus may have pressed somewhat upon the fœtus and contributed to its retention in a fixed position. In regard to the diagnosis, Dr. C. said, he thought the slightest habitude in the use of the tactile sense, would preclude the possibility of mistaking the nature of such a case, or the part projecting from the womb; the change from a full and good pulse to a mere flutter; the facies, the emesis, and sudden cessation of the pains, of themselves, sufficiently establish the diagnosis. Dr. C. added, that the second point of interest is the question whether delivery should have been *sooner* effected: the result of the case might lead to an unhesitating affirmative reply, but the rarity of the accident must be borne in mind, and also the fact that many apparently impacted heads are finally delivered without interference, which of itself would induce delay, in order to make sure that there is no advance of the head. The doubt as to the *necessity* of the destruction of a living human being, and, finally, the blame and odium that will rest upon the practitioner, should a bad result follow so serious an operation, are additional reasons for delay. Dr. C. would not, in another similar case, wait so long, before resorting to instrumental interference.

Dr. CABOT reported the following case :—

Keloides occurring in a Child.—S. H., 4 years of age in May, 1850, very healthy and free from all cutaneous disease, until May last, when he was very severely affected by small-pox, never having been vaccinated—is the seventh child of a mother 28 years old, who was married the day before she was 14 years old, and whose oldest child was born one month before she was 15. She had, she says, scrofula at 5 or 6 years of age, and has a large scar from it on the side of her neck; she lost, some years ago, the upper joint of a finger, from "felon." One of her children had herpes zoster six years ago, when 3 years old. The child S. H. is rather of a leuco-phlegmatic complexion and cast of countenance, thickish upper lip, &c. He recovered from the small-pox and was about the house early in July; about two weeks afterwards an appearance like a burn was observed by the family near the left angle of the mouth.

Dr. C.'s attention was called to this and other tumours on the 3d of October, when he found the principal tumour, near the left angle of the mouth, about two inches long in its longest diameter, and about three-fourths of an inch broad, very irregular in its outline, and having processes shooting out in different directions, as if formed by the running together of several tumours having their axes in different directions; the surface smooth, pinkish, with some vessels ramifying on its surface; firm and hard to the touch; resembling very much in its external characteristics the cicatrix of a burn. There was another smaller tumour close to the first, and, on the opposite side of his mouth were seven others, of which the longest was rather more than one-half by one-fourth of an inch. Besides these, there were five or six quite small ones in different parts of the face and two on the right arm. He never complains of pain except when touched on the tumours; cries often when washed, though not a crying child; seemed to suffer very severely from a fall upon the part, and, at another time, when the principal tumour was roughly handled. October 12th, tincture of iodine, diluted with about its bulk of water, was applied to the tumours on the right side of the mouth, without much, if any, appearance of pain. Oct. 13th, tincture of iodine, rather less diluted, was renewed, and to the tumour on the opposite side of the mouth, solution of gun cotton was applied, the effect of which was to deprive it entirely of colour, making it white, and causing the veins to disappear; some temporary pain seemed to be occasioned by it.

[Keloide is pronounced, by the authorities of the present day upon cutaneous diseases, to be exceedingly rare; older writers even denied its existence

(Bateman). Alibert first described it. Cazenave (*Maladies de la Peau,* 1838) states that it had not, up to the date of his work, been observed in *infancy.* Youth, bordering upon adult age, is its period of election; it is almost universally seated upon the anterior part of the chest, and, by preference, just between the mammæ; it is very rarely multiple. Biett refers to only two multiple cases; in one, eight patches existed; in the other, two; in the first case, on the neck and side of chest; in the second, on the front of chest. Cazenave alone, of the authors we have been able to consult, reports the appearance of the disease upon the *face* (*Dict. de Médecine,* tome xvii. art. Keloide), and this is exceedingly rare. The same writer declares its greater frequency in females and in those of lymphatic temperament.]

Feb. 24.—*Enlargement and Disease of the Liver and Spleen; Concrete Pus in the Heart, Hemorrhagic Abscess in the Back,* &c.—DR. BOWDITCH related the following as having occurred in a man under his charge at the Massachusetts General Hospital.

J. C., æt. 44, Italian, mechanic, entered Aug. 22d, 1850. Had been in this country three years. Two years and a half since, while at Buffalo, his previous health having been good, he noticed a firm body underneath abdominal muscles, near to, and at the left of, the umbilicus. It was not painful. Two months *after* this, he had intermittent fever, but soon recovered. Another attack came on fifteen months afterwards, when the tumour became painful and increased in size. He never had jaundice or any hepatic symptoms. At his entrance the tumour was hard, smooth (evidently an enormous spleen), and extended from the left side nearly to the navel, and, from two inches below the umbilicus, up under the cartilages of the ribs. From this time until death it remained very much as at entrance, save that at one time it seemed rather to augment, while toward the end of life the upper part appeared rather less prominent. At times it was painful and tender, but usually not so. His general symptoms were as follows. His mind was always clear, but for several weeks before his death he was much troubled with dizziness, so that at times he was wholly unable to walk. Epistaxis occurred frequently, and once or twice required plugging of the nostrils. His digestion was usually good for simple articles, but the bowels were costive, and sometimes he vomited—once, a dark fluid containing granules, like decomposed coagula. At the latter part of life he had some cough and pains about the chest. The renal excretion at his entrance was abnormal, containing pus, and he had some priapism. He had no distinct febrile paroxysm. There was observed a tendency generally to glandular enlargements. On December 5th he spoke of a tumour that had suddenly appeared in the left back, and on examination a soft, regularly rounded, non-painful tumour was found. It seemed to contain fluid, and Dr. H. J. Bigelow agreed to that idea, but it was thought best not to puncture it, as it caused little or no suffering. Under hop fomentations, &c., it wholly disappeared in a very few days. Jan. 20th.—A similar swelling suddenly came in the right back and side, extending laterally from within five inches of the sternum nearly to the spine, and from above downwards, over six inches. It projected at least an inch above the surface of the skin, but very gradually lost itself in the surrounding tissue. On the 31st it was punctured with a hydrocele trocar, and ℥xvij of a grumous pus drawn off, with some relief. Meanwhile, the right side of the abdomen, in front, became hard and tender, and the spleen seemed rather lessened in size. The patient gradually became weaker, and died February 12th.

The treatment had been, in the first stages, tonics, quinine, iron, &c.; finally, diuretics and local applications to the tumour.

At the autopsy, the whole right side of the thorax was very prominent, and an incision being made, a cavity was found extending (between the muscles, and at times involving portions of them) from the cartilages of the ribs in front to the vertebræ, and from the spine of the scapula to the ilium. It contained bloody pus, and large coagulated masses, at its depending parts. By the microscope, pus was detected, and also exudation corpuscles and blood cysts. There was no lining membrane to the cavity, but it was continuous, with an infiltrated mass of cellular membrane lying on the right of the abdomen, and between the internal and external oblique abdominal muscles. This mass of condensed infiltrated cellular membrane was the cause of the hardness felt in the right side of the abdomen a few days before death. Axillary glands enlarged, and, like other glands, had a scrofulous, curdy look. Axillary veins of right side filled with enormous coagula, which extended through the vena cava descendens and auricle and ventricle of the heart, there terminating in a jelly-like looking pus. Not a particle of pure fluid pus was to be seen, but this jelly, or "concrete pus," was composed solely of pus globules.

In the left pleura was a large effusion of recent serum or lymph. *Lungs* healthy. *Heart* had a few old white patches. *Liver* pale, *putty* like, soft, tearing with its own weight, red substance scarcely seen; weight 9 lbs. 5 oz. *Spleen* weighed 4 lbs. 15 oz. (!), strongly adherent by old bands to peritoneum; it was solid, red, and, on incision, presented a smooth cut, of a red colour, save that in spots there were hard masses of a shining chestnut. *Kidneys* slightly affected with Bright's granular disease. *Intestines.*—Some old constrictions, from cicatrization, were observed; otherwise, they, with the stomach and other organs, were healthy. *Head* not examined.

Dr. Bowditch remarked that the enormous spleen and liver were interesting, but the abscess containing blood, and the concrete pus in the heart, and the total subsidence of one tumour from the back, were the more important points in the case. He had never seen the like before, although the hemorrhagic abscess and epistaxis probably were dependent on the same cause, viz: the hemorrhagic diathesis, consequent on hepatic disease, of which we have seen not a few examples.

Feb. 24.—*Membranous Croup; recovery from first attack; death after Pneumonia consequent upon a second access of Croup.* Dr. HOMANS reported the case.—The patient was a child of full habit of body, two and a half years of age. Seizure sudden, on waking. Ipecac. and calomel, with antimony, were administered; nausea was maintained. Early in the morning after the attack, Dr. H. used the sponge probang to apply a solution of nitrate of silver (grs. xl to ℥j) to the larynx; false membrane was observed on the tonsils. The child suffered very great dyspnœa from the operation, for half an hour; in an hour's time it began to breathe better; in twenty-four hours from this it seemed greatly improved; then, the paroxysms returned, and the caustic solution was again applied. Five days from this time, the child did not require the physician's attendance during a period of ten days; symptoms of true croup then returned, and the existence of pneumonia was also suspected; Dr. H. again had recourse to the nitrate of silver. The child died, just twenty-two days from the date of first attack.

The following account of the *post-mortem* examination is communicated by Dr. J. C. DALTON:—The middle lobe of the right lung was in a state of gray hepatization throughout; solid, without crepitation, distinctly lobulated and granulated on the cut surface. The bronchial tubes of this part exuded yellow pus abundantly on pressure. There was also a little *red* solidification along the posterior edges of both lower lobes. No pleurisy anywhere, lungs otherwise natural.

The trachea and bronchi generally, down to the tertiary ramifications, contained an abundance of thickish yellow pus. There was a little greenish-yellow lymph on the posterior surface of the epiglottis, and the inner surface of the cricoid and arytenoid cartilages, and the vocal chords were plentifully coated with it. The lymph was soft and easily detached over the greater part of the surface, but along the vocal chords it was tougher and pretty closely adherent. Its greatest thickness was a little over one-sixteenth of an inch. It did not extend farther than one-quarter of an inch below the lower edge of the cricoid cartilage. The mucous membrane underneath the lymph, as well as elsewhere, in the larynx and trachea, was quite smooth and pale. There was no lymph on the pharynx, the arches of the palate, nor on the left tonsil. The right tonsil was not taken out. There was no œdema, nor any redness of the mucous membrane about the pharynx or glottis.

The lymph extended only a very short distance into the ventricles of the larynx, and the mucous membrane of these cavities was quite pale and natural in appearance.

Dr. HOMANS remarked that the case afforded an example of recovery from a distinct attack of membranous croup. The subsequent attack derived additional gravity from the combination of pneumonia with it.

Dr. C. E. WARE referred to a case, formerly reported by him, where fatal pneumonia supervened upon croup.

Dr. J. B. S. JACKSON had noticed the discoloration of the lymph, by the action of the nitrate of silver, *very low down;* an evidence of the penetration of the sponge into the larynx.

March 10.—*Aneurism of Arch of Aorta.* Dr. Coale reported the case.—J. W., twenty-nine years of age, five feet six inches in height; square built; regular in his habits; quiet and pleasing in his deportment. Patient was born in England; his occupation here was that of an ostler. Whilst currying a horse, in October, 1849, in stretching out his right arm he felt something give way in his chest, and a sharp pain took possession of the spot, which he referred to the middle of the sternum, about three inches from its upper extremity. From this time, he was seldom free from the pain, which varied at different times, being increased sensibly by appreciable causes, such as exercise, bad weather, catching cold, &c., although, occasionally, he was worse without any apparent cause. Patient came under Dr. C.'s care in August, 1850, ten months after the first indication of his trouble. The symptoms were the pain, above mentioned, dyspnœa, inability to lie on the right side; otherwise, his health was not much affected. The pulse gave a slight thrill; percussion afforded no appreciable sign; auscultation detected the murmur of *aneurism.* The treatment was general, with the exception that, a little later, when the above symptoms were more marked, infusion of digitalis and elixir of opium were administered whenever occasion called for such remedies.

The bowels, during the latter part of the patient's life, were very indolent, and required the action of senna, jalap, rhubarb, &c., to relieve them. For a month before his death, a cough troubled him, at times, and swallowing became difficult, even of a teaspoonful of fluid at a time. His position during this month was unaltered, being propped up in an arm-chair. For the week before death, prostration of strength was so great as to lead Dr. C. to suppose he would die from constitutional exhaustion. His death, however, occurred instantaneously, from rupture, March 9th, just seventeen months, lacking one day, from the probable commencement of the disease. For two months before his death, the tumour exhibited itself externally, on the right side of the sternum, and *post-mortem* examination showed a little encroachment upon two of the upper dorsal vertebræ, producing an absorption of a large portion of their bodies. The aneurism was evidently the sequence of an organic change in the artery, and affected the vessel, more or less, from its origin to its descending portion. In one direction the tumour pushed out anteriorly to the ribs, whilst, in the other, the posterior wall of the crown of the arch pushed back against the vertebræ, compressing the gullet and causing the difficulty of deglutition. All the other organs seemed healthy.

Gout. Case reported by Dr. Coale.—Mr. R., æt. forty-five, of full, portly figure; has lived, upon an average, nine months of the year in the West Indies, for seventeen years; general health good; skin fair; every appearance of general well-being; habits at table moderate; has lately been "bilious," and taken some aperients with relief of symptoms; found him, Nov. 4th, propped up on a sofa, complaining of pain in back of right hip, which had annoyed him for several days; spot somewhat hard and red; no fever; prescribed spirits of nitre, and wine of colchicum; in the evening, he had his feet down upon the floor and thought he felt better. Nov. 5th, 9 A. M., Dr. C. found him in great suffering after a most distressing night; hip hard, shining, red; pulse 112, hard; skin dry; tongue coated; urine contains reddish and whitish gravel; and is scanty and high coloured. In the evening, patient was easier, colchicum had been continued through the day with considerable effect on the bowels; gave it again at night with ipecac. and opium. Nov. 6th, night very distressing; no sleep; pulse 112, hard; pain not abated; bowels not open; continued prescription with Rochelle powder until free action; in evening, as usual, better; twenty drops of black drop to be given at bed time. Nov. 7th, night passed as distressing as before in spite of opiate; easier in the morning; hip more inflamed; urine scanty, high-coloured, and depositing reddish sediment; pulse and skin as before; continued colchicum with solution of nitrate of potass, and tartrate of antimony, as far as there was toleration; bowels free; applied stupe of conium and poppy-flowers to hip. Nov. 8th, night as usual, painful in the extreme; towards morning a discharge of urine commenced; profuse, high-coloured, clear; one-half gallon discharged in four hours; pulse 100; treatment not altered; in the evening discharge of urine unabated, growing lighter; pulse 88; pain less; hip appears about to point just at the great trochanter. Nov. 9th, visited him with Dr. Shattuck, Sr.; pulse 80; skin cool; great tranquillity of the system, though the night had been very painful; flow of urine continues, but is bright and clear; hip apparently fluctuating, and, after careful examination by both physicians, a bistoury was plunged one and a quarter inches into the most tense spot; no pus; continue prescription, but in half doses; stupes to hip. Nov. 10th, night more comfortable than usual; felt some chill; pulse 80; skin cool; allowed some chicken-tea, and discontinued prescription; hip looks much as before. Nov. 11th, everything looks well; Dr. C. called at midnight and found him in excruciating agony; at times beyond control. The height of the inflammation now seemed to be about five inches below trochanter; made two incisions into the thigh, each one and a half inches long; they bled very freely, and evidently relieved the tension; at 2 A. M., gave sulphate of quinine, gr. ij; pulse before that, 88, soft, but irregular and jerky; left him soon after in a deep sleep. Nov. 12th, had been tolerably comfortable since Dr. C. left him; had taken two doses of quinine; pulse 84; fuller and more regular; Dr. J. Mason Warren saw him with Dr. C. at eleven; made four more incisions, carrying them through the fascia; continued treatment, adding five grains of assafœtida every alternate four hours; in the evening, skin cool; pulse 64; urine light coloured; pain and tension decidedly less; next day improvement continued, and so for a week; at which time another accession occurred, and ten days after it, another still; each marked very distinctly by critical, profuse discharges of urine and immediate abatement of very severe symptoms;

after the last, matter was discovered beneath the fascia of the rectus femoris, and exit was given it by opening with a probe the cicatrix of one of the incisions made by Dr. Warren; two pints of laudable pus were immediately discharged, and another at night; two days after, inflammation took place in the abscess, and a pint of pink pus was discharged morning and night for a week, when the pus became healthy again. Upon carrying in a probe very carefully, it passed up on the outside of the ham to the dorsum of the ilium, eleven inches, where it dropped backwards, the abscess there forming a large sac, from which pus could only escape by means of a counter opening; two weeks after the first opening, the discharge was ten ounces morning and night, when the patient was attacked by erysipelas of the head and face, though not very severely. The discharge from the abscess at once ceased and the opening closed, whilst the erysipelas, treated with quinine, continued three or four days only. The improvement of the patient now progressed with two slight interruptions; an attack of excruciating pain in the ball of the great toe, which exhibited a red spot the size of a half dime, disappearing with the pain in twenty-four hours; and the recurrence of fluid in the abscess, which, however, disappeared without opening, under the influence of frictions with iodine ointment.

The notable points in this case are, gout attacking, at its first onset, a large joint like the hip; whilst the extremities were left intact, and its termination in an abscess.

Dr. J. B. S. Jackson asked, why the above case was described as one of *gout?* The hip-joint, a *large* joint, being the one mainly affected, and abscess being formed in its vicinity; erysipelas, also, was combined with it. Dr. J. said, he would rather have termed it severe inflammation.

Dr. Coale replied, that he had, at first, supposed it to be rheumatism; one of the *toe-joints*, however, had been affected; the paroxysms were regular in their access; the urine characteristic; in some points the case was anomalous.

Dr. J. M. Warren remarked that he had never seen more intense suffering manifested than in this case: the indication of existence of pus seemed almost indubitable; this led to free incisions.

Dr. Coale alluded to Sydenham's graphic description of the very *acute pain* of gout.

March 10.—*Variola in the pregnant female, between the seventh and eighth month of utero-gestation; disease not communicated to the child.*—Dr. Storer said, that, several years since, he reported a case to the Society, where a woman just recovering from *varioloid*, gave birth to an infant which was covered with the eruption of *variola*, and died from the effects of the disease in the course of the week after its birth.

Numerous cases might be cited, from various authors, showing the contagion to have been thus transmitted.

On the 19th of December last, Mrs. W———, between seven and eight months pregnant, was attacked with small-pox; the eruption was making its appearance when Dr. S. first saw the patient. She had the disease very severely, and miscarriage was apprehended. No such accident, however, occurred, and she went safely to the termination of her pregnancy. Dr. S. anxiously awaited her delivery, dreading that the child would exhibit the marks of the infection. On the 28th of January, thirty-nine days, or five weeks and four days, after the appearance of the eruption in the woman, she was delivered of a fine-looking, healthy child, without the slightest trace of any intra-uterine disease. Dr. S. has vaccinated the infant *twice*, unsuccessfully, although the virus was inserted into the arm before it had dried upon the quills.

Contagiousness of Erysipelas.—Dr. Storer referred to the following case as bearing upon the contagious nature of the above disease.

Mrs. N———, Avery Place, was seized on the 20th ult., with the usual symptoms of erysipelas. On the third day from the attack, it had so far progressed, that the face was excessively swollen, and the eyes were closed. The progress of the disease was checked by the application of the tincture of iodine. During the five or six days on which Dr. S. considered it necessary to visit her, her infant, two months old, was kept at the breast as usual; the secretion of milk was somewhat diminished for one or two days, but the child was allowed no other nourishment. Thirteen days have elapsed since the appearance of the disease in the mother, but the infant still remains unaffected.

March 24th.—Case of Fracture of the Pelvis, with Rupture of Bladder.—Dr. J. M. WARREN exhibited the specimens. They were taken from a man thirty years old, who died on his way to the hospital, a bank of earth having fallen on him an hour before. The following were the appearances presented by the body. A fullness was observed in the right iliac region. The perineum was somewhat fuller than natural to the right of the median line. The left side of the pelvis appeared drawn up, so that the spinous process was above the level of the right. The right lower extremity was, by measurement, one half an inch longer than the left. On examination of the pelvis, a fracture was detected near the symphysis pubis, also one through the left sacro-iliac synchondrosis. By rotating the left lower extremity, the left ilium was freely movable, with some crepitus attending the motion. Powerful flexion of the right lower extremity produced an indistinct crepitus in the joint.

A catheter was passed with some difficulty through the urethra, and its point could at once be distinguished in the cavity of the peritoneum.

Permission being obtained, the autopsy was made five hours after death by Mr. F. J. Bumstead, of the hospital, who drew up the following account of it.

"On cutting into the peritoneal cavity, it is found to be entirely filled with blood. Its posterior wall is covered with a dark coloured ecchymosis, and is raised by a large effusion beneath. A small hernia of the tissues, external to the peritoneum, about the size of the little finger, protrudes through the membrane, back of the right os pubis. The confused state of the parts beneath the peritoneum, renders a minute examination impossible. The blood has undermined the peritoneal cavity, and infiltrated the iliacus and psoas muscles.

"The bladder is ruptured to the extent of an inch above the triangular ligament, and posterior to the symphysis pubis. The diagnosis of fracture through the symphysis, and through the left sacro-iliac synchondrosis is found to have been correct. The fragments of the latter are separated to the width of a finger. In addition, the right acetabulum is crossed by several fractures which extend through the ischium and ilium, entirely isolating several pieces of bone. From the fundus of the acetabulum, a triangular piece of bone has been drawn inwards, and the corresponding surface of the head of the femur is crushed to the depth of one or two lines. Ligamentum teres not injured."

March 24.—*Hypospadias.* Reported by Dr. WILLIAMS.—The patient was a man about fifty years of age, and the father of two children. The anomaly was accidentally discovered on undertaking to introduce a catheter, to relieve a retention of urine. The dorsum of the penis and glans presented nothing abnormal. The under surface offered the following appearances:

The frænum was wanting. The edge of the prepuce was united to the under surface of the penis, at the distance of an inch from the extremity of the glans, with the exception of a horizontal slit about two lines in length. The catheter being introduced at this point, in the direction of the axis of the penis, was arrested after passing about an inch, but by carrying its point a little towards the left, it entered the urethra, which described a curve from this abnormal orifice to its usual direction. A cul-de-sac, admitting only the point of a probe, existed in the glans at the natural situation of the orifice of the urethra, and another similar cul-de-sac between this and the slit above mentioned. There was no appearance of any continuation of the urethral canal from the abnormal opening towards the extremity of the glans, but the narrowness of the slit prevented an exploration to determine if any such existed.

The patient being delirious, and remaining so until death, it was impossible to obtain any information respecting the case, except that above given.

March 24.—*Oil of Turpentine in excessive dose.*—Dr. PARKER reported the case. ——E., æt. 26, married, glass-cutter, robust, sanguine, temperate, chews tobacco, and smokes. Has been in the habit of taking as a remedy for pyrosis, to which he is subject, first, "a lump of rosin as big as a nutmeg," followed by "half a tumbler-full of spirits of turpentine" (ol. terebinth. fl. ℥iv). This dose invariably "helps him." He once repeated this quantity, three times in twelve hours, without any known injury resulting. Feb. 5th, 1851:—Went yesterday morning to a turpentine factory, and took his dose in somewhat of a hurry; using the spirit as it ran fresh from the still; thinks he took a little more than usual. Was soon attacked with dizziness, a sensation of extreme weakness, and pains all over his body, particularly in the region of the kidneys and bladder; he fell in the street, while going to an apothecary for relief; took a large dose of spts. æth. nit. without benefit. In the evening he walked to Dr. P.'s house with difficulty; complained mostly of pain in hypogastrium, and difficult and painful micturition; some dizziness and prostration; other symptoms not marked; advised to go to bed, to take pulv. ipecac. et opii, grs. xij, statim; and inf. lini. sem. ad lib. Feb. 7th, patient called, and said he was immediately and completely relieved; a fellow workman came with him, to certify to the quantity of turpentine and rosin he is in the habit of taking.

Dr. ABBOT remarked that he had known a "hard drinker" to take *oil of turpentine* and *camphene*, in large quantities, with apparent impunity. In the above case, the patient is stated to be temperate.

April 14.—*Tuberculous Disease of Mesenteric Glands, subsequently, apparently of Lungs. Tuberculous Masses in Spleen, Liver, and Supra-renal Capsule.*—Reported by Dr. SHATTUCK, Jr.—S., twenty-two years of age, eyes gray, hair chestnut, lips thin, knowing of no hereditary predisposition to tubercular disease, a common out-door labourer till within five months of his death, and then for three months in a nail factory. Eighteen months before his death, soreness of the abdomen came on, and soon after, a tumour, perceived in the epigastrium, and a few weeks later another, below the umbilicus. Loss of appetite, of flesh and strength; at the end of nine months, two or three attacks of hæmoptysis, rather copious. Hectic fever about five months before his death, and night-sweats for three months. The cough commenced between two and three months before death. He entered the hospital March 30th, weak, emaciated, with a pulse of 120, with dullness, bronchial respiration and mucous râle over upper region of both sides of chest. A tumour was felt in the vicinity of the liver, and a movable tumour below the umbilicus. The glands of the neck were enlarged and sore. He died April 8th. At the autopsy, the lungs were found filled with tuberculous matter, and the bronchial glands were tuberculous. The liver weighed three pounds fifteen ounces, and contained large, rounded, tuberculous masses, ten or twelve in number, averaging one and a half inches in diameter. The epigastric tumour was formed by one of these masses. The spleen weighed seven ounces, and contained three tuberculous masses, each about the size of a chestnut. There were several ulcerations in the small, and two or three in the large, intestines. The mesentery and its glands weighed one pound one ounce. Three or four of these tuberculous glands together, constituted the tumour felt during life, which was four and a half inches long by two and a half broad. Several tuberculous masses, of the size of a pigeon's egg, were found in the subperitoneal membrane, attached to the diaphragm. The kidneys were normal, but just above the right kidney, in the place of the supra-renal capsule, was a tuberculous mass, one and a half inches long by one inch in breadth, and the kidney, with this mass, weighed eight ounces.

Dr. Shattuck also reported the following case:—

Tuberculous Disease of Lungs, Bronchial Glands, Intestines and Mesenteric Glands; Scrofulous Disease of Right Ankle-joint.—This patient was fourteen years of age, hair chestnut, eyes dark, lips thin; had been employed for two years in quilling cotton, breathing an atmosphere loaded with dust. No tuberculous disease in family. She commenced coughing about the middle of November, was soon obliged to give up work, with loss of flesh, night-sweats, and early in January, pain in the left ankle, with swelling. Feb. 18th, there was dullness over left upper chest, anteriorly and posteriorly, gurgling under left clavicle, dullness, bronchial respiration, mucous râle over right upper back, scarcely any vesicular respiration; emaciation quite marked. She kept her bed mostly, took cod-liver oil, a drachm three times a day, for thirty days; was constipated, the bowels being kept open by gentle laxatives; the pain and swelling on the whole continuing, though relieved by opiate fomentations. She died on the 6th of April. At the autopsy, the lungs were found loaded with tubercular disease, with small cavities at the summits; tubercular disease in the bronchial and mesenteric glands, none in the cervical or inguinal. Tuberculous matter was found within the first five feet of the small intestine, and numerous ulcerations lower down. The cartilages of the astragalo-scaphoid articulation were thin and detached; the ends of the bones spongy; no tuberculous deposit; serous infiltration of subcutaneous cellular tissue.

April 14.—*Extensive Emphysema into cellular tissue of Face, Neck, and Chest, during difficult labour.*—A case of this nature was reported by Dr. **Abbot**. The distension from effused air was excessive, extending over the whole face, neck, and chest of the patient, as far down as the second or third rib; surfaces crepitating on pressure. The eyes were nearly closed. The affection was not attended by any dyspnœa, nor by any inconvenience except a sense of extreme distension, as if the skin were in danger of bursting, during the pains; nor was it followed by any pulmonary symptoms; it subsided in from eight to nine days. The appearance of the distended surfaces was very like that observed in severe erysipelas, although the redness was not so great as in that disease. Much comfort was derived from the application of cold water during the labour. Subsequently to the labour, slight tenderness was remarked, just above the upper border of the sternum.

Dr. A. thought it probable that the air escaped from the neighbourhood of the bifurcation of the trachea.

[Dr. **Blundell**, in his "*Principles and Practice of Obstetric Medicine,*" remarks, speaking of the above phenomenon, that disruption of the larger air-tubes is not of frequent occurrence; when it happens, an erythematous flush of the integuments manifests itself simultaneously with the swelling from the effused air, the circulation being accelerated. The patient, at first glance, would be thought to labour under a sudden attack of erysipelas. Immediate delivery is desirable; the patient should be prevented from retaining the breath and bearing down. After delivery, the aperture, which, perhaps, is rarely large, probably heals easily and spontaneously. Dr. B. had seen but one case.]

April 14.—*Immediate division of the Funis Umbilicalis in connection with sudden death of the newly-born: hemorrhage occurring from the mouth, &c.*—Dr. STORER remarked that at the last meeting of the Society, in answer to a question put to him upon the subject, he stated *that in a case of labour he never separated the child from the mother until the pulsations in the cord had ceased.* After the meeting had adjourned, he was surprised to learn that some of the oldest and most distinguished members of the Society never waited until the funis ceased to pulsate, but severed the cord as soon as respiration was established. Dr. S. observed that as this might be the general opinion of the Society, and as his remarks may even have appeared absurd, he would ask permission to give his reasons for the opinion he entertained upon the subject, and to cite an authority or two to support it. He stated that it had been for many years a rule of practice, with him, to *wait in all cases of labour until the pulsations of the funis could no longer be felt, previous to the application of the ligature to it,* and that he had year after year thus taught the young gentlemen who had belonged to the private medical school with which he had the pleasure to be connected. Very early in the practice of his profession he met with two cases in which profuse bleeding occurred from the extremity of the cord, owing to the ligature having been removed after the funis was severed. This hemorrhage could not have occurred, unless the blood was still flowing in the vessels of the cord, and, as in the vast majority of cases the pulsations of the funis cease in a few moments (Dr. S. never having known them to continue longer than twenty-five minutes, and that length of time in a single case only), it seemed to him that we should listen to this indication of nature, and wait *a few moments.* He had never met with a case of bleeding from the extremity of the funis since he had pursued this course. Besides, it had seemed to him that there was great danger to some of the important viscera, from the circulation being thus suddenly diverted to them. It is not unusual upon the birth of a child to find the funis pulsating with great force. Is it not more rational (asked Dr. S.) to allow this force gradually to subside, than to check it at once? And may not some of the cases of hemorrhage from the nose and mouth, which have been published in the foreign journals, have been produced by pulmonary congestion dependent upon this cause?

Dr. S. observed that perhaps most physicians would say that they never had met with any case which would lead them to think it necessary to wait a moment; with *Jewell* in the "*London Practice of Midwifery,*" they would remark, "When the child is born healthy, kicks and cries, it does not signify how soon we tie the navel string."

But there were some in the profession who considered it of importance to delay. Thus *Churchill* says, "After waiting until respiration is fully established, or until the pulsation in the cord ceases, a ligature is to be applied." *Dewees* observes, "When respiration is established, either spontaneously or by artificial means, we apply a ligature to the cord, provided pulsation has ceased in it; but not until then." And *White*, in his work "*On the Management of Pregnant and Lying-in Women*," writes, "The funis umbilicalis should never be divided or tied whilst there is any pulsation. By this rash, inconsiderate method of tying the navel string before the circulation in it is stopped, I doubt not," says Mr. White, "but many children have been lost, many of their principal organs injured, and the foundation laid for various diseases."

Dr. S. added that should no member of the profession think the course here referred to necessary, a knowledge of the fact would not influence his practice. No argument had been offered against it, and the cases he had referred to, in which hemorrhage from the funis had nearly proved fatal, marked out for him his duty.

[The above remarks were elicited in consequence of a discussion which arose in the Society as to the propriety of tying the cord immediately, and before its pulsation had ceased. A case was reported to the Society at a previous meeting by Dr. Channing, where the child, apparently very healthy at birth, died in the nurse's arms while being dressed, violent hemorrhage from the mouth taking place; none from the cord, which was tied immediately after delivery.

Dr. Abbot asked if these cases are not referable to tying the *yet pulsating* cord? Dr. Bigelow, Sen., and Dr. Homans, considered *a fully established* respiration a sufficient warrant for severing the funis. A delay of a few moments cannot certainly weigh with the physician against even *possible* risk to the child.]

April 14.—*Spontaneous reclination of the Crystalline Lens.* The case was related by Dr. BETHUNE.—The patient is a man about 50 years of age. Cataract first appeared in the left eye, fourteen years ago. This eye went on to get wholly blind, so that with it he had no perception of light. In this state it remained till one and a half years ago (the *right* eye having for six months previous begun to lose its vision). At the period above mentioned, while walking out in the morning, he *suddenly* recovered sufficient sight to make out large objects. This degree of vision still remains.

His wife, who saw the eye on his return, says that it appeared precisely as at present. With the *right* eye he can now just count his fingers.

On examination, in *right* eye a bluish-white cataract fills the pupil; in *left*, the anterior chamber is clear; at the bottom of the posterior chamber, occupying from one-third to one-fourth, is seen the lens, apparently reclined, and moving up and down with the movements of the eye.

This patient was seen by two surgeons conversant with eye disease, shortly after the change took place, both of whom stated that it was the first case of the kind they had ever seen.

April 28.—Dislocation of the Crystalline Lens without rupture of its Capsule. Reported by Dr. Williams.—The patient, a man about fifty years of age, received a blow upon the left temple, some time since. When first seen, the lens floated freely in the posterior chamber, as the eye was moved in various directions. When lying upon his back, vision was partially lost, and when he stooped forward, the lens completely covered the pupillary aperture, and prevented the access of light. Its convex surface could then be observed, a little beyond the plane of the iris, in the anterior chamber. In size, the lens was nearly or quite of the average dimension.

An attempt was made to incise the capsule, by means of a needle passed through the cornea and pupil, but its toughness prevented more than a small puncture being effected. From this puncture a small amount of lenticular substance oozed out, but not enough to materially reduce the size of the floating cataract. It became, however, fixed behind the lower part of the iris, and can be distinguished in this situation at the present time.

The other eye had suffered from the effects of traumatic inflammation, presenting opacity of the cornea, anterior synechia, and a nearly closed pupil, but no appearance of cataract.

April 28.—Malignant Disease of the Testicle—Diagnosis obscure from accompanying Hydrocele.—Dr. S. Parkman presented the specimen, removed a few days previously; it was somewhat larger than the fist, and the whole organ was transformed into an almost diffluent, encephaloid substance, which, under the microscope, presented the usual appearances of malignant disease in its most marked degree. The interesting point in the case was the obscurity of the diagnosis. The patient was aged forty, of irregular habits, though of good general health, and the tumour had existed eighteen months, gradually increasing from its commencement without pain or inconvenience, other than from the weight and size. His physician inclined to regard it a hydrocele from its pear-shape and well marked fluctuation, but transparency being absent, doubts were naturally entertained, and Dr. P. was consulted. To ascertain the character of the tumor, which resembled a hydrocele exactly in every circumstance but its transparency, Dr. P. punctured it with an exploring needle, and the escape of a small quantity of *serous* fluid seemed to clear up any doubt that might be entertained, the absence of transparency being not unusual in hydrocele, either from a thickening of the cyst or turbidity of the fluid. The diagnosis being thus regarded as made out, Dr. P. introduced a trocar and canula, for the purpose of the radical cure by iodine. Nothing but blood followed the withdrawal of the trocar. It was then stated to the patient that the disease was either an hæmatocele, or some enlargement of the testicle itself—and it was proposed that a small incision should be made into the tunica-vaginalis, and if it was distended by blood, this should be discharged, and thus the disease be radically cured, or, if the testicle was found to be affected, it should be removed by an extension of the incision. This was consented to—and no pain or other symptoms having followed the puncture, the next day but one, a small incision was made which gave issue to a moderate quantity of serous fluid; but the testicle being found diseased, its extirpation was immediately proceeded with. The disease was proved to be as described, one of the testicle, but the fluid secreted in the tunica-vaginalis, and a drop of which was discharged by the exploring needle, naturally led originally to a different diagnosis—especially as there never had been any pain or other sign of disease of the organ itself.

April 28.—*Membranous Croup successfully treated by cauterizing the Larynx with Nitrate of Silver.*—Dr. S. D. TOWNSEND was called early in the morning, to a girl five and a half years of age, who had been unwell for two days. The croupy breathing did not come on until a short time before he visited her. She was treated with Dover's powder repeatedly during the day, and the room was filled with vapour by immersing heated irons occasionally in a tub of hot water. Cauterization with nitrate of silver was practised at noon and in the evening without much relief; at twelve P. M., the croupy respiration increasing, the patient was fast sinking from suffocation; the pulse intermittent; the caustic was more effectually applied. Expectoration of a portion of the membrane, an inch in length and half an inch wide, followed in fifteen minutes; relief was immediate; ether was also inhaled with a happy effect, producing a pleasant sleep. Several portions of membrane were expectorated during the night and the following day, and the respiration became natural. No patches of lymph upon the tonsils or fauces were discovered. At this time, seven days from the attack, the patient is playful, with a good appetite. Expectoration purulent and bloody. Has had no return of dyspnœa, but still speaks only in a whisper.

April 28.—*Tuberculous Disease; sudden death; congestion of the lower lobe of the left lung.* Dr. SHATTUCK, Jr., related the case.—The patient was a sailor, sixteen years of age; in October 1850, he began to cough, and hæmoptysis occurred on a voyage from New Orleans to Liverpool; one or two ounces of blood were raised. The cough continued for some weeks, but he considered himself perfectly well in December, when he shipped to go from Liverpool to St. Thomas. He was much exposed to wet and cold on the voyage, the forecastle being uncomfortable; the cough returned, and was accompanied by emaciation, loss of strength and night-sweats. At St. Thomas, no improvement in his health; one small hæmoptysis; he remained there a month, and then took passage for Boston, not well enough to do any work, and entered the Massachusetts General Hospital, about the middle of April, with cough, purulent expectoration, night-sweats, and quite marked emaciation; dullness on percussion and mucous râle under both clavicles. On Saturday morning, April 26th, he was remarkably bright, took his breakfast with relish, and, an hour afterwards, as he was walking about the ward, suddenly cried out for help, and was assisted to a chair. Urgent dyspnœa existed, and ærated serum was profusely expectorated; the perspiration flowed in drops from his face, and duskiness of the skin was remarked. He died in less than an hour from the time of seizure. At the *post-mortem* examination, the whole lower lobe of the left lung was congested, the vessels filled with blood; no hepatization; extensive tubercular deposit in the upper lobe of the left, and in the right lung; cavities at the summit of both lungs. Ulcerations in trachea and upon mucous membrane of small intestines. No tubercular disease in other organs.

April 28.—*Extensive Mammary Inflammation.* Dr. COALE.—Mrs. B., æt. 26, primipara, had been affected for several years, with an irritable state of the breasts, causing them to swell and become very painful whenever she took cold. After an easy confinement, she did well until the third day, when an inflammation set in, affecting both mammæ, causing them to become enormously enlarged, hardened and painful. The tenderness was so great, that the elbows could not be separated from the side more than six inches. After the application of twelve leeches to each breast, a surface on each, two inches wide and six inches long, was painted with cantharidal collodion, and a profuse discharge established from the blistered surface. The effect was very happy, the inflammation so rapidly and totally subsiding, that the patient nursed her child within ten days of its birth.

April 28.—*Abscess of Mons Veneris.*—Dr. BETHUNE had, recently, a case of this nature. The patient, a mulatto girl eighteen years of age, was under his care for aquo-capsulitis; she was evidently scrofulous. Mercury, in the dose of one grain daily, was administered for a period of ten days; no effect upon mouth. At the end of this time the diseased eye having rapidly improved, inflammation of the cellular tissue of the pubis occurred; in a week, fluctuation was evident; on puncture, pus, of rather watery character, was discharged. There was considerable constitutional affection, which diminished, and appetite began to return before the discharge of the pus. 29th, patient nearly well; the eye, also, had almost recovered.

Dr. PARKMAN had seen two cases of abscess in the region of the pubis, where the pus was very fetid.

Dr. MINOT referred to three cases, observed by him, of a somewhat similar nature, wherein tuberculous matter formed within the *labia*, and, softening, was discharged. The pain in these cases was excessive.

May 12.—Dr. J. M. WARREN read the following letter on the use of chloric ether as a disinfecting agent, from Mr. C. H. HILDRETH, one of the House Surgeons at the Mass. Gen. Hospital.

"Having recently had occasion for the use of chlorine as a disinfecting agent, I was led to consider, whether there might not be some method more convenient and efficacious than that usually adopted for its evolution. Though the gas extricated by the new method is not chlorine, as it was at first supposed to be, but chiefly hydrochloric acid, yet it seems practically of at least equal efficiency for deodorizing purposes.

"Chlorine is usually generated by the action of sulphuric acid upon a mixture of binoxide of manganese and chloride of sodium; by the action of the same agent upon the chlorides of lime or soda; or by the simple exposure of the latter in open vessels. If, in the first process, the binoxide of manganese be omitted, hydrochloric acid is evolved; this latter method is in popular use. Even where the manganese is present, much hydrochloric acid is given off, and, if pure chlorine be desired, manganese and sulphuric acid only should be used. In either process the application of heat is necessary.

"The first of these methods is attended with some inconvenience, and requires considerable attention. By the second, the gas is rapidly liberated, but the supply is soon exhausted, and the materials must be replenished. The third is simple and convenient, but not very efficacious.

"The plan which I propose, is both simple and efficient. It consists in the combustion of chloric ether in a common lamp.

"The gas arising from the decomposition of the ether has been analyzed by Dr. Bacon, of this city, and found to be chiefly hydrochloric acid with a little chlorine. Practically, I have not found it less efficient than pure chlorine for disinfecting purposes. It has been used to a considerable extent in the Massachusetts General Hospital, and appears to give no inconvenience to the patients. Its odour may be plainly perceived upon entering a ward where the lamps are burning, and in a moderate degree it is far from disagreeable. So far as has been observed, it exerts no injurious influence upon the furniture or metallic utensils of the ward. Its deodorizing powers appear fully equal to those of chlorine.

"For disinfecting the wards of hospitals, or the private apartments of the sick; for deodorization during an autopsy in a private house, and for numerous similar purposes, I apprehend the chloric ether lamp will be found convenient, inexpensive, and efficacious."

Dr. W. stated that he had frequently employed the gas made as above described, during the last two months, and with much satisfaction; he considered it as the most neat and convenient process for deodorizing, where a gaseous substance was required, that had come under his notice. He had used it in a glass lamp, such as is manufactured for burning camphene; this is provided with a small cap or extinguisher, which covers the top of the lamp, and prevents evaporation of the ether, when not in use.

Art. VII.—*Cases of supposed Phthisis Pulmonalis treated with Cod-liver Oil.* By J. W. C. Ely, M. D. [Read before the Rhode Island Medical Society, March 19, 1851, and communicated by the Committee of Publication.]

The following twenty-four cases were treated in the Providence Dispensary, Eastern District, from Feb. 1848 to March 1851. These cases are not selected; but they are all the cases of consumption that came under treatment in the dispensary, during the above-mentioned period, in which cod-liver oil was given. To these are appended notes of five cases, that occurred in private practice.

Case I.—David McD., a dyer, aged twenty-eight, dark hair, a little below medium height, born in Scotland; married, of good habits, had been sick six months; admitted to the dispensary, Feb. 8th, 1848; since November had been confined to house; at this time was confined to bed in consequence of very copious hæmoptysis; besides this, the symptoms were small and frequent pulse, severe cough, muco-purulent expectoration, emaciation, failing strength, shortness of breath; a little later, hectic fever and night-sweats. Percussion gave dulness under left clavicle; inspiration very rough, nearly bronchial, expiration prolonged and distinctly audible; mucous râles. He remained in this state, without any marked change in the rational symptoms till the middle of June, though the physical signs showed that the tubercles at the apex of the lung had begun to soften. The genial warmth of summer so far restored his strength and mitigated the severity of his cough, that he was able to take gentle out-door exercise—but there was no improvement in the local trouble in the lungs. Upon return of cold weather all his symptoms grew rapidly worse; and to them were added hectic fever, severe night-sweats, and diarrhœa; soon after his stomach became disordered, it would retain only the blandest articles of diet. At this time he attempted the use of cod-liver oil, but his stomach would not retain it, owing (as I thought) partly to the inflamed condition of his stomach, and partly to the bad quality of the oil; it was the brown oil—none other could be had at the dispensary at that time—he was very anxious to use it, and made the attempt several times and in small doses. He died Dec. 3d, 1848.

No autopsy could be obtained.

Case II.—Margaret G., aged two and a half years, of Irish parents, flaxen hair, and lymphatic temperament, lived in cellar tenement on bank of the canal: sick six weeks, as near as I could learn from her parents, who were of very drunken habits, and gave their children but little attention Admitted to dispensary, March 27th, 1848. *Symptoms*—Exceedingly rapid pulse, hurried respiration; almost constant cough; muco-purulent expectoration, or rather vomiting, as the fits of coughing ended in this; hectic fever, night-sweats and diarrhœa. *Physical signs*—Dulness at apex of both lungs; bronchial respiration, and subcrepitant râles; oil ordered, but owing to repugnance of child, and want of parental authority, it was not taken regularly. Died April 8th.

No autopsy permitted.

CASE III.—Mary Jane W., aged four and a half years; American parents; fair hair and complexion; lymphatic temperament; residence, an attic; father died of consumption; all her brothers and sisters except one, then an infant, had died of consumption, or some form of scrofula (her infant sister has since died of consumption). Sick three weeks; admitted to dispensary, April 12, 1848; at this time was suffering from severe febrile symptoms and the peculiar cough of measles; for the past three weeks had been confined to the house with hooping-cough, which disease was then very prevalent in that part of the city. Upon second visit, she was covered with the eruption of measles; this ran its course and gave its character to the cough; after the disappearance of the measles she grew worse, rather than better; cough was very severe; emaciation great; very rapid and feeble pulse; hurried respiration; hectic fever and profuse sweats occurred every twenty-four hours. *Physical signs*—Dulness upon percussion under both clavicles; inspiration bronchial; expiration audible and rough, and subcrepitant râles; put upon use of cod-liver oil, a teaspoonful three times a day; it had no apparent good effect; she became very cross, and would not allow me to examine the lungs after the first few days. She went from bad to worse, and died June 23, 1848.

Upon *post-mortem* examination, found both lungs studded with tubercles, many of them miliary; the lungs did not collapse upon opening into the pleural cavities; and the amount of crepitant lung was very small.

At apex of either lung were many small tubercular cavities.

CASE IV.—Winifred G., aged forty; a little above medium height; fair complexion and spare habits; born in Ireland; married; of intemperate habits; mother of case 2d; residence the same; sick two weeks; admitted to dispensary, April 15th, 1848. From the account she gave of her sickness, I came to the opinion, she had had a severe attack of acute bronchitis; she was then confined to the bed. *Symptoms* were quick, small pulse; accelerated breathing; severe cough, muco-purulent expectoration; emaciation. *Physical signs*, dulness under right clavicle; roughened inspiration, and audible and prolonged expiration; about first of May, she commenced the use of oil in tablespoonful doses three times a day. In the early part of June, she removed from her cellar tenement to dry and airy rooms; there was some improvement in her symptoms, and she was able to walk out; but the physical signs did not improve, but gave evidence of softened tubercles and small cavities; it was surprising that even the symptoms improved; she was dependent upon charity for her food and what little nursing she did have; her husband spent all of his scanty earnings in drink, and frequently returned at very late hours of the night to drive her out of her bed. About the middle of September she was removed to the house of a sister and well cared for, but the disease had then advanced to the third stage of consumption, and little or no benefit could be expected from continuance of the oil. Died Oct. 17, 1848. No autopsy could be obtained.

CASE V.—Elizabeth M., aged forty-four; American; of medium height; black hair and dark complexion; spare habit; married; intemperate; sick nine months; admitted to dispensary, May 4th, 1848. *Symptoms*—Small and rapid pulse; great shortness of breath; almost constant cough; purulent expectoration; hectic fever and sweats; considerable emaciation; bowels costive when first seen, but early in June, diarrhœa was added to the list. *Physical signs*—Dulness under right clavicle; bronchial, almost cavernous respiration, and subcrepitant râles; at a later period amphoric respiration and metallic tinkling and pectoriloquy; used the oil for three or four weeks, then gave it up and could not be induced to resume it, as she saw no benefit from what she had taken. Died July 8th, 1848. No autopsy could be had.

Her husband was intemperate and very poor. She had no one to nurse her or prepare her food but her neighbours.

Case VI.—Mary C. H., aged nine years; coloured; inmate of the Shelter for Coloured Orphans; seen for the first time, May 23d, 1848; sick one month. *Symptoms*—Quick pulse; some shortness of breath; emaciation; hard, dry, hacking cough. But little was revealed by percussion and auscultation at first; after three or four weeks slight dulness; short and rough inspiration, and audible expiration clearly indicated the deposition of tubercles. At this time was placed upon use of oil, and continued it till removed to Newport by her friends; at time of removal, the rational symptoms had improved; cough less; some increase in flesh and strength; physical signs remained the same. She left July 15th, 1848. Last week I learned that she was still living in Newport Poor-house.

Case VII.—Timothy H., common day-labourer, aged thirty-five years; born in Ireland; above medium height; brown hair; slight figure; married; of intemperate habits; sick eleven months; admitted to dispensary, Oct. 22d, 1848. The shanty he occupied was the most miserable I ever saw; its dimensions could not be more than ten feet by twelve; and not high enough for a man of medium height to stand erect; it was banked with earth half-way to eaves, except at the door, to exclude the cold; the furniture corresponded with the exterior; a fixture similar to a crib for cows, elevated two feet from the floor, served for a bedstead. They were almost wholly dependent upon private and public charity. But he utterly refused to leave this, his castle, and go to the asylum. When first seen, this case presented the following symptoms: Quickened pulse; severe cough; purulent expectoration; considerable emaciation; short breath; hectic fever, and sweats; had had hæmoptysis; was then confined to bed. *Physical signs*—Dulness marked; loud bronchial respiration, and abundance of subcrepitant râles. In November he commenced the use of the oil; but there was no improvement in his symptoms till February. During the spring, the cough and expectoration became considerably less; appetite improved, and he increased in flesh and strength, and during the warm weather was able to take considerable out-door exercise, and thought himself getting well. During the last part of summer omitted oil; upon return of winter and confinement to his den, he gradually lost all the ground he had gained, though he resumed the use of the oil, and died March 19th, 1850. No autopsy permitted.

Case VIII.—Martin H., aged six years, light hair and fair complexion, scrofulous diathesis, born in Ireland, had been sick two months when admitted to dispensary, which was January 2, 1849. Father was at this time suffering from necrosed femur. His parents gave the following account of his sickness: Two months before, he landed from an emigrant ship at Blackwell's Island, New York, sick with the measles. As soon as he was able to bear the journey, he was brought to Providence; since his arrival, he had suffered from a continued and severe cough, abundant expectoration, and constant loss of flesh and strength. *Symptoms* then were small and rapid pulse, muco-purulent expectoration, very rapid respiration, extreme emaciation, hectic fever, and sweats, with diarrhœa. *Physical Signs*—Dulness under right clavicle, bronchial respiration, and an abundance of moist râles. He was placed immediately upon the use of the oil in small doses. For a few weeks there was no apparent improvement, though he did not decidedly lose ground. About the first of February an abscess formed over the elbow joint, which was allowed to open itself; another formed over the gluteal muscles, which was opened, and discharged a gill of healthy pus; these both kindly healed. During this month he began to improve; the first decided mark of improvement was in the appetite and lessening of the diarrhœa, and increase of flesh. By the first of June he was able to go out; on the 8th of August I found him with his play-fellows, enjoying their sports with as much zest as any of them. He coughed and expectorated none, and was as fleshy as he had ever been; he is now in perfect health. This family were very poor; during the cold weather their one room was many times uncomfortably cold, even with an overcoat on.

CASE IX.—Mary S., aged 33; light hair and complexion; below medium height; in health fleshy; born in Ireland; of good habits; had had a cough for three weeks; admitted to dispensary January 19, 1849; was then about house, four months advanced in pregnancy. *Symptoms*—Accelerated and small pulse, severe cough, muco-purulent expectoration, shortness of breath, hæmoptysis, and loss of flesh and strength. *Physical Signs*—Slight dulness under right clavicle, rough inspiration, and audible and prolonged expiration. Commenced and continued use of oil regularly for about four weeks; at end of this time she expressed herself unwilling to take it regularly, as she had not improved under its use; and as she had been troubled with nausea and vomiting, and an attack of local pleurisy occurring about this time, I did not insist upon its continuance. Left dispensary April 13. I afterwards learnt that she was confined in due time, and soon began rapidly to decline, and died two months after confinement.

CASE X.—Patrick H., aged thirteen months, had been sick one month, child of Case VII. The only other child had *backward* curvature of the spine, admitted to dispensary March 8, 1849; presented the symptoms, and some of the physical signs of consumption; took the oil for a fortnight without benefit; died April 9.

CASE XI.—Maria M., aged six years, coloured, inmate of the Shelter for Coloured Orphans, had been sick three weeks, admitted to dispensary March 18. *Symptoms*—Quick pulse, dry, severe cough, a little shortness of breath, loss of flesh and strength. *Physical Signs*—Slight dulness and rough respiration; placed upon use of oil in teaspoonful doses; before any decided improvement had taken place was removed to south part of the State by her friends, March 28, 1849.

CASE XII.—Margaret McC., aged 32, below medium height, slight figure, and light hair; born in Ireland; married; intemperate; residence a miserable house on India street; the family were very poor; had been sick four months; admitted to dispensary April 17, 1849. A few minutes before my first visit she had been delivered of a very small and much emaciated male child at full time. *Symptoms*—Weak and rapid pulse, purulent expectoration, breathing short and difficult, great emaciation, and soreness and tenderness over bowels, with diarrhœa. *Physical Signs*—Dulness under both clavicles, bronchial respiration at apex of one lung, and cavernous at apex of the other, and subcrepitant râles; had had hæmoptysis. Commenced oil, and continued it till sent to asylum, which was as soon as she could bear the ride. Died June 23d. No autopsy could be had.

Case XIII.—Abby B., aged six years, coloured, inmate of Shelter, first seen October 12, 1848; had been sick four weeks with whooping-cough; presented following symptoms: Almost incessant cough, muco-purulent expectoration, rapid and weak pulse, short breath, great emaciation, and had had slight hæmoptysis, dulness under clavicles, rough inspiration, and prolonged and audible expiration, with moist râles. Commenced use of oil in teaspoonful doses, and continued it till January 17, 1849, when she was discharged free from cough and expectoration, in full flesh and strength, to all appearance well; the moist râles had gone, respiration better; but there still remained some roughness and dulness. On the 16th of the following October she again came under treatment, with about the same train of symptoms as the year before, but auscultation gave evidence of softened tubercles and commencing cavities; placed again upon the use of the oil, but it did not at all stay the progress of the disease. Died January 19, 1850.

Case XIV.—Harriet B., aged five years, coloured, inmate of the Shelter; was brought there sick; could not learn how long she had been sick; mother died of consumption; several brothers and sisters had died of some form of scrofula. This case presented the signs and symptoms of advanced stage of consumption; placed on use of oil, but it had no beneficial effect. First seen May 15, and died May 26.

Case XV.—Bridget D., aged nine years, of fair complexion and light hair, scrofulous diathesis, born in Ireland, sick one month, admitted to dispensary July 26, 1849. *Symptoms*—Dry hacking cough, a somewhat accelerated pulse, loss of flesh and strength. *Physical signs* were dulness under right clavicle, and nearly bronchial respiration. Used oil till September 1st, when she was discharged free from cough, fleshy, and with good appetite, and feeling perfectly well. January 14, 1850, was again called to attend her with hydrocephalus. Parents (who were of the more intelligent class of Irish, though poor) told me that she had been in good health till ten days before. Auscultation and percussion gave no sign of the tubercular deposit, which I felt quite sure existed there the preceding July. She died January 29. No autopsy could be obtained.

Case XVI.—Thomas D., stone-cutter, aged 37, below medium height, dark hair and complexion, born in Ireland, married, of intemperate habits, had been sick three months; before admission to dispensary he had been confined in the Providence jail; seen for the first time November 22d, 1849; at this time presented the symptoms and physical signs of the first stage of consumption; placed immediately on the use of the oil, and took regularly a tablespoonful three times a day till December 18, when he went to the asylum. There he continued the oil till the 1st of February, when he was discharged at his own request. At this time he had greatly increased in flesh, and was but little troubled with cough and expectoration, and went to work at his trade. August 24, he again applied to the dispensary in the last stage of consumption, and, though he used the oil, it only mitigated some of his symptoms. He died September 23.

Case XVII.—Thomas McD., labourer, aged 29, medium height, brown hair, born in Ireland, married, of good habits, had been out of health and unable to work for fifteen months, admitted to dispensary December 1, 1849. *Symptoms.*—Pulse 80, cough, purulent expectoration, short breath, emaciation, and profuse hæmoptysis. *Physical signs.*—Dulness and bronchial respiration. He was placed immediately on the use of the oil. He left dispensary December 20, 1849. I have since learned that he continued the use of the oil, and is still living.

Case XVIII.—Mary N., chambermaid, aged twenty-five, born in Ireland, single, of good habits, had been sick three months, admitted to dispensary December 11, 1849; she was in the last stage of consumption, had used the oil before applying to the dispensary, but without benefit; died December 15.

Case XIX.—Anne G., aged twelve years, coloured, inmate of Shelter, had been sick three or four weeks; first seen January 4, 1850, of very scrofulous constitution, mother died of consumption, and she has suffered from the various forms of scrofula since infancy. *Symptoms,* when she commenced use of the oil, were small, quick pulse, breathing short, very severe cough, purulent expectoration and great emaciation, hectic fever and diarrhœa; had had hæmoptysis. *Physical signs.*—Decided dulness under left clavicle, bronchial respiration, and a sound like that made by crumpling parchment, with subcrepitant râles. Discharged June 3d to all appearance well, free from cough, and all the other symptoms above mentioned, and fleshy as she had ever been. She is now free from all symptoms of consumption.

Case XX.—Honora K., aged fourteen months, parents Irish, had been sick five months; admitted to dispensary Jan. 30, 1850. *Symptoms.*—Very rapid pulse; severe cough; extreme emaciation; long-continued diarrhœa, and hectic fever, and night sweats; dulness at apices of both lungs; bronchial respiration and an abundance of mucous râles; used oil without benefit, and died March 4, 1850.

Case XXI.—Hugh D., a tanner, aged twenty-six, born in Ireland, of dark hair and complexion; medium height, and quite full habit in health; married, and of good habits; had been sick five months; admitted to dispensary Feb. 20, 1850. *Symptoms.*—Confined to bed; quick pulse; cough; purulent expectoration; great emaciation; hectic fever; night sweats, and severe diarrhœa. *Physical signs.*—Dull on percussion at apex of right lung; bronchial and cavernous respiration and pectoriloquy; subcrepitant râles; stomach inflamed, and very irritable, could bear only the blandest articles of a farinaceous diet, and these it would sometimes reject. He attempted to use oil in small doses, but his stomach would not bear it; died March 15.

Case XXII.—Margaret D., domestic, aged twenty-five, born in Ireland, single, medium height; of good habits; had been sick one year; admitted to dispensary July 25th, 1851. *Symptoms.*—Pulse small and 120; severe cough; muco-purulent sputa; shortness of breath; emaciation considerable; some hectic fever and sweats; had had hæmoptysis. *Physical signs.*—Dull at apex of left lung; bronchial respiration and moist râles; placed immediately on use of oil and continued it, a tablespoonful three times a-day, till the middle of September, when she ceased to call; at this time she had regained her lost strength, and more than usual amount of flesh; a slight cough remained; the physical signs had improved; she thought herself well. I have not heard from this case since.

CASE XXIII.—Patrick O., common day-labourer, aged thirty-three, above medium height; dark hair and eyes; of spare figure, born in Ireland, widower; of good habits; had been sick twenty-one months; applied to dispensary Oct. 14th, 1850; he lived in an attic with his two young children, and no housekeeper, dependent upon charity for his dinner and cooking; could not be induced to go to the asylum. *Symptoms.*—Quick pulse; cough; purulent expectoration; short breath; emaciation and hectic fever; dulness under right clavicle, and bronchial respiration; used the oil regularly, but without benefit. Died January 17th, 1851.

CASE XXIV.—Mary D., aged thirty-six, born in Ireland, medium height; married; of good habits; had cough for two weeks; admitted to dispensary Jan. 8th, 1851; was confined the 1st of December. *Symptoms.*—Cough; slight acceleration of the pulse; mucous expectoration; short breath; loss of appetite, strength, and flesh; profuse perspiration caused by slight exertion. *Physical signs.*—Dulness under left clavicle and bronchial respiration, with subcrepitant râles; placed upon use of oil; left dispensary Feb. 10th, somewhat improved—left because she did not improve fast enough to suit her ideas of medical practice.

To recapitulate. There were two cases (1 and 21) in which the oil could not be retained on the stomach; in these cases, the blandest articles of diet were often vomited. There was great tenderness over the stomach, and a peculiar red and raw, but moist appearance of the tongue.

Four cases (6, 8, 15, and 19) in which the use of the oil was followed by apparent recovery.

Four cases (7, 13, 16, and 17) in which the disease appeared to be arrested by the oil; but it afterwards returned and proved fatal.

In twelve cases (2, 3, 4, 5, 9, 10, 11, 12, 14, 18, 20, and 23), its use was followed by no decided improvement. But of this class there are four cases (2, 10, 11, and 14) in which it did not have a fair trial, as it was taken but a few days and irregularly; and in three cases (2, 10, and 14), it was not used till a few days before death.

Two cases (22 and 24) left the dispensary, one very much improved, the other but slightly. What the result will be, time alone can reveal.

All the subjects of this paper were poor, and many of them had drunk of the bitter cup of poverty to its very dregs. Few, except the inmates of the Shelter, had anything that could be called nursing; some sadly lacked for bread. All, except the children of the Shelter, were badly housed and lodged. None had the comforts of even competency, or the help it brings to any course of practice in the treatment of this disease. Most (as is usually the case with the poor) applied for medical aid late in the disease.

The following cases occurred in private practice:—

Abby P., cook; aged twenty-five; coloured; above medium height; single; of good habits; had been sick five months; first seen January 3d, 1851. *Symptoms.*—Pulse small and weak, 100 and above; severe cough; mucopurulent expectoration; short breath, and considerable emaciation; some dyspeptic symptoms; distress after taking food; tenderness over stomach, and constipation; slight hectic fever, and at one time night sweats. *Physical signs.*—Decided dulness under right clavicle; bronchial respiration and subcrepitant râles; placed immediately on use of oil; in three or four weeks the dyspeptic symptoms disappeared; coughed and expectorated much less, began to improve in flesh and strength, and has continued to improve up to the present time; coughs only a little at night and in morning; is nearly as fleshy as in perfect health, and feels herself nearly well; has been out; physical signs have somewhat improved; dulness not quite so extensive; bronchial respiration less; and superficial râles nearly gone. She still continues the use of the oil.

To Dr. C. W. PARSONS I am indebted for notes of the two following cases:—

Amelia M., aged ten; of lymphatic nervous temperament; her mother died of phthisis; has had two or three turns of lung fever, so called, in successive winters. This winter she took cold, a fortnight after the eruption of measles had disappeared, and was confined some weeks with severe cough; profuse muco-purulent expectoration, hectic fever, and great debility. *Physical signs.*—A slightly prolonged expiration, with very slight dulness on percussion, below humeral end of right clavicle; attempted to give her cod-liver oil, one teaspoonful twice a day; for a few days she took it well, with no obvious effect of any kind. But it soon became nauseous, and though she took it very resolutely, it caused nausea and feeling of weight in the stomach, and was once or twice vomited up. It was relinquished. Under simple expectorants she gained, and was soon able to bear the tartrate of iron, under which she steadily improved, and in five weeks from the first time seen, she was able to go out.

F. S., aged about twenty-four, clerk, was dyspeptic, and rather weak for many months, about two years ago. He was troubled with flatulence, eructations, and distress after eating. In January, 1850, he had become free from these symptoms, but had a slight hæmoptysis. Through that year he was occasionally troubled with wandering pains in the shoulders and chest, and slight cough; thought he was made worse by close application at the desk, and took one or two excursions. He was improved by a trip to Worcester, but took colds twice on journeys to New York, and seemed not to be benefited by them. Last autumn he walked usually six or eight miles a day. He grew thin and weak, and his cough was more constant, though never very troublesome. In January, 1851, he had lost more than twenty pounds; looked quite thin and pale, and again applied for advice. Respiration was pure over the front of the chest, with a mere suspicion of roughness below one clavicle, near its outer part. He began to take cod-liver oil, and felt better in a few days. Soon after this he went to Worcester, continuing to take the oil, and going out but little while there. He came back in about four weeks, very much better, and has since continued to improve. He weighed one hundred and twenty-eight pounds when he went to Worcester, and one hundred and forty-two pounds when he came back.

For the facts of the following case, I am indebted to the kindness of Dr. Mauran:—

M. W., a teacher in one of the grammar schools; aged nineteen; dark hair; florid complexion; a little below medium height; full figure, and full chest; sanguine temperament; hereditary taint of consumption on the paternal side.

The party had suffered from two or three attacks of aphonia. In June, 1849, she was attacked with double pneumonia, but upon the subsidence of this disease, the cough continued. She expectorated mucous sputa, and did not regain lost flesh; hectic fever recurred daily; pulse slow, except during paroxysm of fever. About the first of September, examination of the lungs gave the following: Slight dulness under humeral end of left clavicle; roughened inspiration, and audible and prolonged expiration; the symptoms gradually grew worse till November, when auscultation gave evidence of softened tubercles and cavities formed in left lung; expectoration became purulent; emaciation was considerable; was confined to her room, and part of the time to her bed; at this time she was placed on use of cod-liver oil, a tablespoonful three times a day; in course of four or five weeks showed signs of improvement; coughed and expectorated less, and began to improve in flesh. In February was able to be about the house and attend to light duties; during the last part of spring, exchanged calls with her friends. One evening in the last of May played and sang the whole evening with a party of friends; the next morning she had an attack of profuse hæmoptysis; these recurred repeatedly, and she sank under the hemorrhage, and died June 17th, 1850.

To the kindness of Dr. Fabgan, I am indebted for the following case:—

H. C. A., seamstress; aged thirty-three; above medium height, and of slight figure; three or four of the family had died of consumption; she had been six weeks sick when first seen, which was on Dec. 30th, 1850. *Symptoms.*—A quick small pulse; severe cough; mucous expectoration; considerable emaciation; pains in chest, and a feeling of tightness across it. *Physical signs.*—Dulness at apex of right lung; bronchial respiration and subcrepitant râles. About the middle of January, was placed on the use of cod-liver oil; not a fortnight had elapsed before she began to improve, and at the end of two months all the above-mentioned symptoms had disappeared, and she was more fleshy than when in good health.

In the foregoing abstract of cases, I have aimed at brevity, in order not to prolong this paper to too great a length; but I fear that the notes of some of the cases are so imperfect as to be uninteresting, and of no practical value.

PROVIDENCE, *March* 19*th*, 1851. No. 172 Benefit Street.

ART. VIII.—*On the Uses of the Eustachian Valve.* By R. RANDOLPH, M. D., of Pennsylvania.

THE provision in the fœtal heart which has received the above designation, although comparatively insignificant as to the space which it may fill in the wide field of physical research, has not failed to obtain from the observers of nature an occasional notice and conjectural comment. There are two such instances, at least, which claim attention, in which the suggestions advanced have met with free currency and a share of reputation. But of these it may be safely said that, while they are recommended by an essential similarity, neither of them has been universally received with absolute satisfaction; and a close examination of them must, I think, bring to light a want of accuracy and completeness sufficient to account for the existence of some reserve in the approval of those who have been led elsewhere to appreciate the mutual fitness and subserviency which prevail among created things, irrespective of apparent magnitude.

In accordance with the hypothesis of Sabatier, the Eustachian valve has been often represented as an essential contributor to the development of the brain. By shielding, that is, the upward and placental current of blood, upon its entering the right auricle, from the more thoroughly venous stream of the cava descendens, and by directing the former, in a degree uncontaminated, into the route which leads to the head and upper extremities. Professor Wistar found for it another service (dependent, of course, upon the same direct action of the valve) in the securing of a like supply to the heart itself, whose labours are already so considerable and so obvious as to furnish a notable pretext for such a distinction. Whatever the respect to which these views may have formerly been entitled, either on the ground of authorship, or on that of intrinsic plausibility in the then less advanced state of anatomical science, one simple and well-known circumstance of itself forbids our regarding them in the present day as altogether adequate: namely, that the value is found proportionally largest at the earliest stages of its existence, when the otherwise imperfect condition of the heart nevertheless insures a speedy coalition of the two dissimilar currents. For the septum of the ventricles is not completed until about the end of the second month of the embryo, while the Eustachian valve is heard of (as may hereafter be seen) weeks previously. The heart in the mean time consists of a ventricle and two auricles; the embryo, in this particular, having reached a position in the progress of development corresponding to that occupied by the reptile in the fixed scale of animate nature.*

What is the function of the Eustachian valve at that earlier date?

Confining our attention to the heart itself, we recollect that both venæ cavæ discharge into the right auricle; and that, during intra-uterine existence, there is no supply by way of the pulmonary veins, even when these have been formed; the left auricle would therefore be entirely out of the route of the circulation, except for the deficiency (foramen ovale) in the auricular septum;

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* Authorities appear to differ respecting the exact date of the septum of the auricles. The question is a verbal one so far as relates to the present subject, some circumlocution merely being avoided by the view above assumed, *i. e.* that it exists prior to the septum of the ventricles. Under the contrary supposition, the chief difference would be that, instead of speaking of the "left auricle," we should have to do with such phrases as "that portion of the common auricle which is afterward to become the left auricle," &c. The assumption of the text has evidently the authority of analogy in its favour.

the ventricular cavity, we have just seen, is at this time one and undivided. With these facts only before us, we might readily conceive that, at the instant when a contraction of (both of) the auricles occurs, accompanied by the ventricular expansion, there should be a tendency for all the blood which passes through the right auricle, to rush directly into the common ventricle by the right ventricular opening; that this course, which might at first be maintained by the expense of an unnatural rapidity at the entrance chosen, would be afterward confirmed by an enlargement of that entrance; and that the left auricle, not being then needed, would not be found in its place when its services are called for. Against such a defect as this, the Eustachian valve may be supposed to provide. By the interposition of that barrier, the access of the blood to the ventricle by the right orifice being necessarily impeded, it may be inferred that the requisite detachment is forced to adopt the more circuitous course of foramen ovale, left auricle, and left ventricular opening; and that the left auricle, and the forming mitral valve, by thus receiving employment, are ensured existence.

The constant diminution which so early commences in the relative size of the valve may be attributed to the development of the septum of the ventricles. As that advances, the exigency which has been represented may decrease, though it cannot yet be supposed entirely to disappear, especially whilst that partition is in its most recent and feeble state. For, so long as the right auricle continues to be, as it were, the centre of the circulation, and the ductus arteriosus continues to furnish a more direct route to the arch of the aorta by way of the right ventricle, in other words, until the close of the fœtal term, the unaided septum might be in danger of yielding before the greater momentum which would be necessarily induced at the right side, were there no check remaining at the site of the Eustachian valve. The natural action of the parts might thus still tend excessively to develop the right auricle at the expense of the left, as well as to restore the unity of the ventricles by the rupture or the gradual distension of their septum.

As a general expression, then, of the inference which has been here urged, it may be said that it is the primary office of the Eustachian valve to furnish the function, and so to originate the development, of the left auricle of the heart; and that it subsequently defends that function and that development until the changes which occur in the circulation at birth render such a chamber, for the first time perhaps, absolutely indispensable.*

The observations contained in the brief extracts which follow appear to me so nearly to have anticipated this conclusion, that I should scarcely have been thus backward in introducing them, had it not been with the hope of thereby making their value more conspicuous to the reader:—

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* For the account of a case in which one auricle, with three ventricles, constituted the heart of *two* "perfectly-formed and well-developed" fœtuses united at the sternum, (extracted from the *Edinburgh Medical and Surgical Journal,*) see *Ranking's Half-Yearly Abstract,* No. VI.

"At six weeks the Eustachian valve forms a distinct" (of course not complete) "partition, behind which are the *orifices of both venæ cavæ and the foramen ovale.*" * * * "At two months, the right auricle has become sufficiently large to be examined with the naked eye. The crescent of the Eustachian valve describes a larger curve, and allows a freer communication between the anterior and posterior cell of the auricle. At two months and a half, the orifice of the superior cava is higher up, but still covered by the Eustachian valve. At three months and a half, there is but little of this vein covered by the valve, and now therefore the blood of the two cavæ mixes in the whole auricle, and not in its posterior cell only."*

The extent of the Eustachian valve, in its earlier phases, and its attitude toward the different orifices of the auricle, as thus presented to us, are perhaps too significant to be here enlarged upon with reference to the preceding argument. According to the same evidence, it may be further observed that the separation of the upward and downward currents assumed by Sabatier, cannot have place before the last of the periods cited. It may be supposed to gain place afterward as a subordinate function, which, so far as it exists, is without doubt requisite for the after distribution which that author has traced to it, and which must so evidently ensue. But other indications for such separation, while less distant, are perhaps equally imperative. That pointed out by Wistar would appear quite as much so as any that could be deduced from aught that we could *à priori* have assumed as to the necessities of the fœtal brain. Another we may hold to be such as is answered by the mere presence, in the left cavities, of the *quality* of blood which should be thus introduced there. By the supposition, a fluid approaching in its character to the arterial of after life, being offered to that incipient susceptibility which is destined to maintain the action of this side of the heart, applies its appropriate stimulus: this peculiar endowment of the left chambers, and the corresponding qualification in the nature of the blood which is thrown into them, continuing to co-operate and to improve together, the heart becomes duly prepared to meet and respond to the important crisis, at which an unadulterated fluid reaches it through the pulmonary veins.

It is very conceivable that, toward the end of the fœtal term, when the internal equilibrium and symmetry of the heart have become somewhat confirmed by the increased development and efficiency of its other parts, the main design which has been here ascribed to the Eustachian valve, now resolved into the mere protection of that equilibrium and symmetry, may be overtaken, or finally surpassed in importance, by such other duties as may thus, incidentally as it were, devolve upon it.

The subsequent imperfect and variable condition of the valve, it must be admitted, forbids the ascription to it of any constant function in the perfect subject. Is it not possible that its persistent vestiges may have their use in assisting to maintain such disturbance of the blood in the right cavities of the heart as may be sometimes necessary to prevent coagulation in the cases of congestion which frequently occur, in health and in disease, from sudden and transient pulmonary obstruction?

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* Martin St. Ange: Prize Report to the French Academy of Sciences in 1832, cited in *Flood on the Arteries, &c.* London, 1839.

ART. IX.—*Contributions to Practical Dermatology.* By SILAS DURKEE, M.D.

(Read before the Suffolk District Medical Society, Boston.)

Eczema Impetiginodes.—Alfred H., aged 67 years, day-labourer, small stature, feeble constitution, temperate habits, weight about 120 pounds. He gave the following account of himself. His disease appeared about thirty years ago, and for several years was confined to the hairy scalp and the face; and from his description I judge the case to have been simple eczema originally. After the lapse of some dozen years, the malady disappeared entirely from the head, and left no trace of its existence there except a partial loss of hair. Upon leaving the head, it broke out in various other places, sometimes on one spot, sometimes on another. He stated that he had spent most of his life in the interior of New York, and that he had done whatever his circumstances would allow for the amelioration of his complaint, which was considered to be a bad case of scrofula by the physicians who had prescribed for it.

He called upon me for medical advice on the 18th of December, 1848. Upon examination, I found that the disease embraced the whole of the neck, except a small portion of integument that covered the trachea. The skin presented a highly inflamed and excoriated appearance. In some spots it was covered with thin laminated scales; but the greater part of it was not defended by even such a covering. It was hypertrophied, and sprinkled over with numerous transparent vesicles and yellow-headed pustules. From this region there was an exudation of thin fluid, which produced irritation and smarting, and was a source of almost ceaseless torment to the patient. He experienced no little inconvenience whenever he attempted to move his head, especially in a lateral direction, as the skin could not be put upon the stretch without producing more or less pain. He was poorly clad; and another source of suffering to him was the exposure of the part to the attrition of the cold air. On each side of the neck he wore a pad of rags, which shielded the lower portion of the abraded surface, while it absorbed the moisture that was continually effused upon it.

Upon the shoulders, back, and abdomen, were numerous irregular blotches of thin crustaceous squamæ, varying in size from half an inch to two inches or more in diameter, some of them being in nearly a dry condition, while from the others the puriform matter that was discharged, required the parts to be covered with bits of rag or lint. The chest and shoulders were sprinkled over with a great number of isolated pustules, which had remained nearly stationary for a long period. They were much larger than is commonly seen in pure impetigo. They were likewise more elevated above the surrounding tissue than is usually the case in that eruption, and might easily have been mistaken for acne pustulosa.

Upon the pubic region the disease had existed for several years. It was originally simple eczema, without doubt, but had degenerated into the variety now under consideration. It had extended from the symphysis, and spreading upward and outward upon the lower part of the abdomen, had marked out for itself a broad triangular figure, and was a source of great discomfort to the patient. The laminated crusts upon this district were thinner than in most other places, and the natural pilous covering of the part rendered them less adherent. The disease occupied the whole of the scrotum also, and the integument of the inguinal folds and adjacent skin of the thighs. There were but few small pustular vesicles and but a trifling exudation in this region, which in several spots was perfectly raw and inflamed, as we see immediately after the removal of a blister. Upon the popliteal space of one leg was a patch as large as the whole of my hand, and consisting of an eruption partly vesicular and partly pustular, interspersed between flimsy incrustations, with here and there portions of red, shining skin, from which the scabs had been detached. The disease could here be studied in all its different phases. From beneath the scabs there was a discharge of thin puriform matter; and the patient was obliged to keep several thicknesses of rag secured to the part by passing a bandage round the knee. Locomotion of the limb was at times considerably impeded, and attended with no little inconvenience. A great portion of the integument covering the extremities was little else than an irregular patchwork of yellowish-brown incrustations, which, for the most part, were quite adherent, and partook more of the impetiginous character than those did upon the trunk of the body. From beneath some of them, semi-purulent matter was continually oozing out, so that the patient was obliged to do them up as well as he could in bandages.

It was interesting to notice the rule of uniformity which appeared to regulate the development of the eruption upon the corresponding portions of the surface; for instance, just at the insertion of the deltoid muscle of each arm, and extending upward, was a cluster of vesicular pustules, almost precisely alike in number, size, and relative position, one to another, as well as in the progress they had made in passing from one stage of maturity to another. The same symmetrical arrangement, as it may be termed, was manifest in various other instances. Upon the scapulæ were several groups occupying the same relative localities; so upon the forearms, about the shoulders, and lower extremities. This phenomenon may frequently be observed in the distribution of the pimples of psoriasis guttata, and other cutaneous affections; and its explanation is to be found, no doubt, in the fact that in those portions of integument that correspond to each other, there is an exact identity of anatomical mechanism in the structure of the primordial atoms of cells, nerves, blood-vessels, lymphatic vessels and other tissues, which, together, make up that complex exterior investment, the skin.

Nearly the whole of the surface covering the sacrum was marked by an indelible cicatrix with corrugations, the product of an impetiginous ulceration which had existed there several years before, and was not unlike the scar occasioned by a superficial burn. Upon the right hip there was a large irregular scar of like origin and aspect; and another commencing near the angle of the two or three lower ribs on the left side, and extending downward and forward three or four inches. The disease had left similar footprints of its former habitat on some dozen other places. It is quite probable that the eruption upon the places where the cicatrices remained was an impetigo unmingled with eczema; for, although both diseases are seated in the dermoid follicles, yet the permanent marks, such as are mentioned above, are rarely, if ever, seen as a sequence of any variety of eczema.

It is hardly worth while to describe more at length the different appearances, and the various intermediate stages existing between the elementary type and the final period of the disease; nor shall I attempt to state precisely what proportion of the entire surface was implicated; but I think it may be said with truth that nearly one-half of it was affected at the time the case came under my care. The submaxillary and cervical glands, and some other of the lymphatics, were swollen, and had been in that preternatural condition more or less from the commencement of the eruption.

Notwithstanding the amount of surface diseased, the patient had for the most part been able to do some light work with only occasional intermissions in the winter season. He stated that for a year or two before I saw him his general health had suffered more than it previously had from the constant annoyance which the eruption produced. He had a poor appetite, rather restless nights, costiveness, tongue red and cracked, general feebleness, and a small pulse at sixty per minute.

[Considering the duration of the malady, the extent of ground it covered, the age and other circumstances of the patient, as giving more than ordinary interest to the case, I invited several physicians and the students of the Tremont Medical School to see him before the treatment was commenced.]

Treatment.—Entertaining the erroneous notion that the use of animal food would tend to increase his superficial infirmity, the patient had for some time almost wholly abstained from it. He stated that his medical advisers recommended this course. But his debile condition at this time clearly indicated the propriety of putting him upon a generous diet; and he was advised, among other things, to eat freely of beef, mutton, milk, apples, oranges, &c. He was prohibited the use of pork and all kinds of shell fish. He was directed to keep warmly clad, and to wash thoroughly every night in soft warm water and soap. His poverty did not enable him to take the ordinary warm bath. At bedtime he was to use the following ointment: ℞. Unguent. aq. rosar. ℥iij; Iodid. sulphuris ℈ij; Ol. bergamot, Ol. lavandul., āā q. s. M. For internal use: ℞. Syr. sarsa. comp. ℥iv; Iodid. potassæ ʒiv. M. Dose, a teaspoonful in a wineglass of cold water morning and night for one week; afterwards take a teaspoonful three times a day. Keep the bowels open with syrup of senna *pro re nata*.

February 1, 1849.—Patient called to-day, it being about six weeks from his first visit. Said he had followed the directions faithfully. Appetite quite good; bowels easily regulated by the senna; his health had improved considerably; disease of the skin nearly gone. The integument so recently covered with large blotches of scaly incrustations, &c. looked red and shining, but otherwise it was nearly in a normal state. There were some six or eight spots covered with lamellar incrustations, which remained much in the same condition as before any application had been made; but no new eruption had come out. The bandage round the knee, and the folds of cotton cloth being no longer needed, were laid aside. The ointment was altered to the strength of a scruple of the iodide of sulphur to the ounce, and to be applied night and morning to the few remaining places which had not yet healed.

March 2, 1849.—Patient called. He stated that, after his visit in February, the eruption manifested a disposition to reappear in some of the old places. This new eruption was strictly eczematous, and may be considered as factitious, for it was due in a great measure, if not wholly, to the irritation produced by the strong iodine ointment; and instead of that, the following was used upon the new crop of vesicular patches with good effect: ℞. Ung. aq. rosar. ℥i; Plumbi subcarbonat. ʒi; Cretæ præparat. ℈ij. M. Apply it freely three or four times a day. The iodine ointment was still applied upon the few places which as yet remained nearly unchanged by what had been done to them. The improvement, with the exception just named, continued to advance quite satisfactorily; and it was evident that the abnormal habit of the cutaneous vessels was nearly broken up. Instead of the iodide of potassa, which the patient had taken now about ten weeks, the arsenious acid was substituted as in the following pill, which I have prescribed in various cutaneous affections for several years in preference to any other mode of administering arsenic: ℞. Oxid. arsenic. alb. grs. iv; Pulv. rad. glycyrrh. ʒss; Pulv. piper nigri grs. xxv; Extr. conii ʒij. M. ft. pil. No. lxiv. He took one pill every morning directly after breakfast for thirty days; then omitted them by my directions for one week; then commenced again and took them as at first until they were all gone. [In cases where it is desirable to continue the use of arsenic for a long time, the extract of conium in combination, as in the above pill, has a tendency to prevent any gastric or intestinal disturbance which the arsenic might otherwise produce. A small quantity of opium is sometimes used as an adjuvant, but its constipating quality is an objection, and on this account the conium is to be preferred. I have often given this pill for six or eight successive months, with occasional intermissions of a few days; and sometimes two pills a day for two or three weeks, and then reduced to one pill daily. They should always be taken immediately after eating. See Dr. Green's *Compendium of Cutaneous Diseases;* also the *New York Medical Bulletin* for May, 1844.]

The patient repeated his calls pretty regularly, every two or three weeks, until the end of May, by which time his condition was in all respects so far improved that he had no need to consult me. Now and then he reported a trifling relapse or new outbreak of eczematous eruption; but it was of very slight character, and always yielded to the lead ointment in a few days. I occasionally meet the patient in the streets, and he uniformly replies, in answer to my inquiries, that he remains free from his malady. From the beginning of my attendance upon him, he has had a *carte blanche* to call upon me whenever he had occasion, and doubtless he would have renewed his visits had his ancient enemy again made its appearance.

Jan. 1, 1851.—Met the patient to-day in the street. Informed him of my intention to report his case to this society, and asked him if he still remained free from the disease upon his skin. He replied in the affirmative, and said, also, that he had gained ten or twelve pounds of flesh since his cutaneous difficulty ceased to trouble him.

Remarks.—Notwithstanding the morbid condition of the skin had existed for a long time in the foregoing case, yet it admitted of an easy cure; and, although the malady belonged to a class essentially inflammatory, it is more than probable that a reducing plan of treatment would have resulted prejudicially. It can scarcely be doubted that the disease was perpetuated and aggravated in consequence of the enfeebled vitality of the subject; and hence the curative indication was directed mainly towards infusing a more vigorous tone into his constitution, while the applications, addressed directly to the local affection, were mostly of a stimulating character. The decided impetiginous quality which preponderated in the case while it was under my care shows why this local treatment was borne so well. In any other form or variety of eczema it would have been injurious, except in some chronic case where but a small spot of skin was involved.

During the last ten years, I have almost daily seen individuals, especially females, who have been striving with utmost diligence to rid themselves of some superficial blemish, by a long process of what may be termed semi-starvation; but not one in fifty of these persons ever obtained the reward which would have been so welcome to them, and which their spirit of persevering self-denial would seem to have merited. Some years ago, a young lady of my acquaintance had a pustular eruption of moderate severity upon her face, and, in the hope of annihilating it, she abandoned the use of meat, butter, and most other substantial articles of food for two years; she did not allow herself, of our native fruits, so much as an apple or a pear in that time. She lived on potatoes, bread, rice, tea, and coffee, with sugar and milk. The result of this experiment was that she lost some flesh, and all her hope, but none of her malady. Scores of such cases might be related.

As it regards diet in the treatment of cutaneous disorders, that is undoubtedly the most appropriate which is calculated to secure a healthy standard of the *vis vitæ*, and on no account should any dietetic habits of an opposite tendency be allowed, for the general health of the patient is paramount to any partial evil that may be upon him. There are some articles of food that should be withheld. I have for some years entertained the belief that the use of pork and shell fish was injurious to persons labouring under any serious form of skin disease. Some dermatologists not only forbid their patients the use of the articles just mentioned, but also all kinds of wild game. We know that the Hebrew tribes, who, from climate and mode of life, were peculiarly liable to certain cutaneous maladies, were not allowed to eat pork, nor any kind of fish that had not fins; and it is altogether probable that this prohibition, in addition to its religious import, had reference to their physical welfare.

I will here mention a case which came under my immediate observation some months ago. A gentleman, somewhat dyspeptic, undertook to improve his digestive powers by the use of the best kind of smoked ham three times a-day. He ate freely of it, the fat and the lean, sometimes cooked, and sometimes raw, and used no other animal food for about nine months. He had the fat and the lean parts cut up and minced together very fine. It suited his taste, and, so far as he could judge, his stomach. He took it with brown bread toasted. His drink was water and milk. He gained flesh, and his general health improved quite satisfactorily; but at length he got disgusted with his monotonous bill of fare, and was obliged to give up his bacon entirely. In the mean time, he began to be troubled with boils. They first appeared about both knee-joints; then higher up on the thighs; and, finally, on the body and upper extremities. He had four in the right axillary space; two at one time. They continued to form in successive crops to the number of forty in four months. They finally disappeared without the aid of medicine. The gentleman attributed them, and I think correctly, to the great quantities of bacon which he took. But the story of his calamities is not yet finished. After commencing upon his new plan of living, he had a pretty sharp attack of eczema upon the pubic region. It was removed in about three months by topical applications, and by his return to a more miscellaneous diet. Before his excessive use of bacon, this man had always been exempt from all cutaneous eruptions.

It is not uncommon, both in eczema and impetigo, for the lymphatic glands in the immediate neighbourhood of the local difficulty to be more or less enlarged, and to remain in that condition throughout the whole period of the cutaneous lesion; and this glandular tumefaction has often been erroneously regarded as decisive evidence of a strumous diathesis in the patient; and thus the word scrofula has become, as it were, a sort of nosological scapegoat for maladies which are entitled to a more appropriate and definite place in the nomenclature of diseases. We might with equal reason infer that every abdominal enlargement in the female was a case of pregnancy, or that every sore nipple was a cancer of the breast, as to suppose that those cutaneous affections which are attended with glandular engorgements, such as existed in the case we have been considering, were necessarily of a scrofulous nature. It seems to me that we see here the effects of the law of sympathy, and nothing else. The same condition exists in the axillary glands from the irritation produced by a blister of flies upon the arm, or by the vaccine virus; so in the process of infantile dentition, the neighbouring lymphatic glands sometimes swell to an enormous size, and the inflammation terminates in an abscess. Various other instances, showing a sympathetic participation of the lymphatic glands when other structures are primarily involved in disease, might be adduced. We know nothing of this law except by its effects. We see its operation and its ambiguity everywhere in the animal economy, just as the natural philosopher witnesses the presence and the power of the universal law of gravitation in the physical world about him. He can reason and judge of this principle only by its effects. So also in regard to light. We may ask him, what is light? is it a material substance in nature, or is it only a property of matter? Human science is not yet prepared to answer. And if the medical man, in his study of some of the deep principles of animal life, occasionally finds himself in terra incognita, he is still on equal ground with the natural philosopher, who, although surrounded on every side by living floods of light, is nevertheless, in regard to that light, in the regions of utter darkness.

The following case is in almost every particular in perfect contrast with the preceding one, so far as the appearances of the two, when they came under my care, were concerned; and to the practitioner not familiar with the various modifications which time and other circumstances produce in cutaneous diseases of the same family, it might seem almost incredible that the two belonged to the same class, and had also a common elementary form or type by which the relationship could be recognized and established; yet such is the fact.

Eczema Mercuriale. Tuesday, May 15, 1849.—Was called to visit Miss C., aged nineteen years, of full, robust habit, light complexion, blue eyes, delicate skin.

About three weeks before I saw her, she took the advice of a distinguished physician relative to a tumour which appeared in the right breast in September, 1848, and had gradually increased.

With a view to disperse the tumour, the application of "Emplastrum hydrargyri cum ammoniace quatuor digitorum" to the breast was prescribed, with directions for it to remain on the part three weeks. It remained on twelve days, and then fell off of its own accord, having lost its adhesive quality; and a new one of the same kind and size was applied in its stead, and remained on until the day previous to my visit. On Sunday, the 13th of the month, a minute vesicular eruption, attended with great heat, redness, smarting, and pruritus, appeared upon the diseased breast and adjacent parts. On Sunday night, patient got no sleep on account of the rapid increase of the eruption and its accompaniments, which had become still more severe and annoying. On Monday, the 14th, in addition to the troubles already mentioned, the face began to swell, and the eruption continued to spread in every direction. The patient and her friends became somewhat alarmed, and again consulted the physician, who directed the plaster to be removed, and a bread and milk poultice to be applied in its stead, and a teaspoonful of carbonate of magnesia to be taken once in three days.

Upon examination, I found the entire surface of the body, neck, and superior portion of the extremities, exhibited an intense redness, and was covered with extremely small vesicles, thickly crowded together; in some spots upon the upper part of the back, the eruption was so minute that it was scarcely perceptible to the naked eye, although distinctly visible with a common pocket magnifier; skin hot and dry; face a good deal swollen, and presented a rough mottled aspect, but had less eruption and efflorescence upon it than the trunk and limbs. Patient complained of pain in the head; tongue red and moist; mouth and throat sore; deglutition painful; no salivation, or mercurial odour from the breath; hands and feet cold; bowels constipated; pulse eighty, and moderately full.

Directed the patient to take an emollient bath, consisting of twenty-five or thirty gallons of warm water, with four or five quarts of thick oatmeal gruel to be added. She remained in the bath until a sensation of faintness was induced. This was according to my directions. After the bath, she took a small dose of sulphate of magnesia. The surface was kept wet most of the time for twenty-four hours with the following lotion: Emuls. amygdal. ℥xvi; Liq. plumb. subacetat. ʒiij; Acid hydrocyanic. ʒiij. M. The emollient bath to be repeated again in the evening at eight o'clock. For nourishment and drinks, arrowroot, rice water, toast water, orangeade, lemonade, *ad libitum.* The sulphate of magnesia operated twice.

On making my visit on the fifth day of the disease, found the patient had passed a bad night, and got but little sleep. The only relief she experienced was while taking the warm gruel baths. She stated that while in them she was comparatively comfortable. She suffered much from nausea at the stomach; great prostration and sense of suffocation. The face was dotted over with vesicles and greatly swollen, so much so that the eyes and even the eyelashes were entirely concealed from view, and the features of the countenance obliterated. She complained of great pain and soreness in the face and head, and about the throat and fauces, especially when in the recumbent posture, and on this account she preferred the best position she could find in an arm-chair rather than to be in bed. In fact, such was her dread to be placed in a lying posture that she scarcely made trial of the bed for nearly twenty-four hours previous to this visit. The tongue was moist and red, and slightly swollen. The whole vocal apparatus was in such a condition, from the inflammation and soreness, that she could not converse, except to answer questions with the utmost brevity. The skin was intensely hot and dry. The eruption now occupied the whole cutaneous surface, except the hands and feet; and the vesicles, which first appeared upon the chest and back, had increased in size, and contained a lactescent fluid, constituting the *pustular vesicles* of Cazenave. At this time, also, the patient began to be annoyed by a most troublesome pruritus, burning pain, and inflammation about the rectum and pudendal region—the latter being greatly swollen. The discharge of urine from the fourth day of the attack until near its termination was small in quantity and attended with some dysuria. I may remark here, also, that throughout the whole course of the disease the thirst was quite moderate; and the pulse, which was small and feeble, did not at any time reach beyond 90 per minute.

The warm emollient bath was ordered for the patient as soon as it could be prepared, and was to be repeated again in the evening and the next morning. She was to remain in as long as possible without fainting. Continue the use of the hydrocyanic acid lotion. Warm fomentations to be constantly applied to the rectum and neighbouring demesnes. Ten grains pulv. ipecacuan. comp. at eight o'clock in the evening, and repeat the dose, if necessary, in three hours. ℞. Spirit. nit. dulc. ℥ij. Put three teaspoonfuls into three gills of gum water, and let her drink it in the course of the day. Let her drink freely, also, of elm gruel, rice water, and the like. Jug of hot water to the feet. Keep chamber cool and well ventilated.

On the evening of the sixth day of the invasion, I again saw the patient. Found her bolstered up in bed, in which attitude she had been most of the time since my last visit. She insisted that it was the only position in which she could obtain any rest, on account of the pain in the head, swelling and distress about head, face, &c. The Dover's powder gave her tolerable rest the previous night. She took a small dose of sulphate of magnesia, which produced one dejection. Says she derives more benefit from the soothing effect of the warm gruel baths and fomentations than from all else done for her. A profuse salivation from the mouth commenced in the early part of the day; numerous vesicles upon the ears, face, neck, chest, and shoulders had broken, and from these a profuse, ichorous discharge was poured out; also from the meatus auditorius, the mucous membrane of the nose, eyes, labia pudendi, and rectum. The acrimonious effusion produced a most uncomfortable smarting and excoriations, wherever it came in contact with the inflamed integument; and, as a consequence, her sufferings were greatly aggravated. The eyes were still buried in the tumefaction of the lids, the pain and irritation in which were as great as are witnessed in an attack of acute ophthalmia. She continued to have nausea, except when asleep, without scarcely any mitigation or intermission, and great coldness of the extremities, unless prevented by the application of artificial heat. She had at this time more distress in the head, chest, and throat than she had hitherto experienced.

From the commencement of the serous exudation from the skin, and from the mucous outlets, until its discontinuance, a fetid odour from the patient, closely resembling the exhalation from putrid fish, was very perceptible. The atmosphere for several feet around the bedside was impregnated with it. The effluvium was entirely distinct in character from that produced by ordinary ptyalism. The true mercurial fetor of the breath was not present in the least degree at any time during the patient's illness. The use of the Prussic acid lotion did not appear to do any good, and it was discontinued, and a decoction of wheat bran, with a small quantity of liquor plumbi sub-acet., was substituted for it. The proportions were—decoction of bran ℥xvi; extr. plumbi ʒij. M.* This was applied with soft linen rags upon the whole surface of body and limbs several times a day. The compound infusion of roses was directed to be used as a gargle every two hours during the day.

At my visit on the seventh day of the eczema, I found that during the previous night the patient got some sleep from the opiate which she took. Constitutional symptoms much the same as at last report; but some alteration had taken place in the appearance of the skin. The scarlet red tint of the integument about the shoulders, neck, and face began to assume a dusky hue, and the eruption upon these localities became confluent, and formed into circular groups or discs, leaving intermediate spaces of a lighter and more natural colour, and imparting to the surface a general aspect not unlike rubeola. Nearly simultaneously with these changes, the minute vesicles on the extremities increased in size and numbers; and in the course of twenty-four hours their limpid contents passed into an opaque, sero-purulent fluid. Treatment continued.

On the following night was called up at 1 o'clock to visit Miss C. She was bolstered up in bed, and was suffering with excruciating distress in the face, head, rectum, and other localities. The acrid secretion trickled down upon the face like tears upon the cheeks of a weeping child; and from various other districts it oozed out more than ever upon the highly sensitive skin; and from this circumstance alone could I account for the sudden exacerbation of symptoms that so tormented the sufferer. The pulse was ninety per minute, and small, and, for the first and only time, intermittent. The condition of the mouth and throat remained about the same as at the two last visits.

The temperament of the patient was by no means of a nervous character. She was calm; and her fortitude in this season of her agony showed "how sublime a thing it is to suffer and be strong."

About nine o'clock the previous evening, she took ℈ss of Dover's powder, but did not experience its usual anodyne effect. The family happened to have some camphorated tincture of opium, and I gave her ʒiss in orange-water. As a topical application, Goulard's extract of lead, a teaspoonful to about five gills of warm water. The patient was very much relieved in about half an hour, and fell into a quiet sleep, which continued for several hours. The disease had now reached the Ultima Thule of its violence. In the course of twenty-four hours the symptoms all changed for the better, and so continued to the last.

The final stage of the disease was not characterized by any circumstance different from what occurs in other varieties of eczema. The serous discharge rapidly diminished in quantity, became concrete, and formed into thin, soft, laminated incrustations. These were cast off from many patches in large flakes, and other incrustations were formed and detached in rapid succession. They served, for the time being, as a useful covering and protection to the subjacent tissue, which had been the seat of such a high degree of inflammation, and which required a period of several weeks for the full and perfect restoration of its normal structure and functions.

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* The translator of Cazenave mentions in a note that he once saw a person with this remarkable variety of eczema rubrum, as he terms it, and that the greatest benefit was derived from the use of the scalded bran. As I have frequently been asked how it should be prepared, it may not be out of place to say that a good way to do it is to turn on two quarts of boiling water upon one quart of the bran; stir it for ten or twelve minutes, when it will be fit for use. As a soothing application, it will be found useful in other varieties of eczema, especially in the acute stage. It may be used with the utmost freedom on any place or person, and at as high a temperature as can be borne conveniently. When applied quite warm, it is more agreeable to the patient than when cold. Rags wet with it may remain on the part.

The eruption appeared one day later, and was somewhat less copiously developed upon the arms and legs than upon the trunk of the body and the face; and it appeared one day later upon the dorsal aspect of the hands and feet than it did upon the superior portions of the extremities; and in these particulars it seemed to be governed by laws analogous to those which we witness in the external manifestation of measles. The contents of the vesicles evolved upon the extremities did not burst through their epidermic envelop, except in those which attained comparatively a large size, the fluid in the smaller specimens being absorbed. The vesicles seated on the other districts poured out their contents in a very profuse manner for five or six days, so that the eyes, ears, face, neck, chest, &c., were constantly bedewed with the exudation; and this circumstance contributed materially to augment the patient's sufferings, which at times were very intense.

The tarsal glands were somewhat inflamed for a few weeks. Many of the hairs fell out from the edge of the lids, but were reproduced in due time. By the thirteenth day from the first outbreak of the eczema upon the chest, the patient had so far recovered that my visits were discontinued; and she has enjoyed good health from that day to this.

Remarks.—The first observation that suggests itself in connection with the history of the foregoing case is that the constitution of the patient was endowed with some peculiar idiosyncrasy that rendered the action of mercury highly poisonous to the system. What this idiosyncrasy was we know not, nor of its presence could any one have had either knowledge or indication *à priori;* and of course no possible blame should be attached to the medical adviser who recommended the application of the plaster. Probably not one individual in a thousand would show such a remarkable susceptibility to its action as did the unfortunate lady in this instance. It seems pertinent to state that the father of this patient has been under my professional supervision more or less for several years; and on one occasion he was salivated by the use of some four or five blue pills taken in so many days by my direction. That his constitution participates largely in the scrofulous diathesis, in the proper acceptation of the word, I know. He has been the father of five children—all daughters, and all inheriting the strumous taint. One of them died about a year since with phthisis, under the age of eighteen, and another, a little older, is now in the very last stage of that disease.

If I mistake not, it is the general opinion among the medical profession that individuals of scrofulous temperament do not tolerate the use of mercurial preparations so conveniently or advantageously as those whose system is exempt from the peculiarity in question. I certainly can add the testimony of my own experience of twenty years in support of this idea.

Strictly speaking, it may be said that every medicine, and every other substance taken into the system, whether through the skin, the stomach, lungs, or any other medium, may be regarded as a poison, unless its natural properties are adapted to supply *material* for the nourishment and growth of the animal economy; but of the *modus operandi* upon the tissues and organs, we know literally nothing—not even of a grain of ipecac., whether its specific action be displayed upon the skin or the stomach. We see the effect, the result; but I am not aware that we can, with all our attainments in medical philosophy, explain or comprehend the workings of the machinery producing this result. And in the case before us, all that we can claim to know is that a certain poison was taken into the system through the agency of the cutaneous absorbents, and that another nature employed another system of vessels, which we call the excernents, for the expulsion of that poison.

To a practitioner who has never had the opportunity to watch the progress of a severe case of mercurial eczema, it may seem that, in describing the condition of my patient, I have sometimes indulged in language of extravagant hyperbole, not warranted by her symptoms or sufferings; I beg, therefore, to submit a sentence or two from the dermatologists who have particularly described this variety of eczema. Dr. Green says: "In the severer forms of the disease characterized as *febrile* or *malignant*, which seem generally to be induced by persistence in the use of mercury, after the eruption has once made its appearance, the vesicles are larger, and evolved amid extreme constitutional disturbance, violent febrile symptoms, great heat of surface, and swelling upon the parts upon which it is about to appear. The eruption is of a dusky red or purple hue, and the vesicles, when they burst, which they do before long, discharge abundantly. The cuticle, in bad cases, is even detached in large flaps, and extensive excoriated and bleeding surfaces are then exposed. The pain which accompanies the disease is excessive." Professor Wilson remarks that in the most severe form of the affection, namely, in that produced by a continuance in the use of mercury after the eruption has appeared, the face is enormously swollen, the eyelids closed, the throat tumefied and painful, the colour of the efflorescence of a deep purple, and all the symptoms aggravated.

Eczema mercuriale is a rare form of cutaneous affection. Besides the case we have been considering, I have never seen but one. It was comparatively mild, and was induced by six or eight grains of the submuriate of mercury, taken daily in grain doses in combination with squills and tart. antimony for a pulmonary affection. The whole skin was involved in the eruption, which lasted about twelve days. The patient was a female about twenty-five years old. She had no ptyalism, nor was there an emanation of the fish-like odour in her case. The serous fluid of the vesicles was not discharged upon the surface at all, but was conveyed back into the system by the absorbents; and I regard this as the reason why no peculiar smell was produced in this case.

It has already been stated that the peculiar odour, resembling rotten fish, was coeval with the discharge of the fluid from the vesicles, and is to be attributed in part, perhaps, to the decomposition of that fluid; but I must venture an expression of my belief that the phenomenon in question was due mainly to the influence derived from the mercury which had been imbibed into the system. I cannot persuade myself that the smell was accidental merely, dependent on decomposition or putrefaction; although I confess this thought was uppermost in my mind for a time. But the probability in regard to the mercurial origin of the odour derives strong confirmation from the case cited by Professor Wilson. The offensive odour which was poured out from the abraded dermis is compared to putrid fish.—(Wilson on the *Skin*, p. 169.) Dr. Green, in his *Compendium on Cutaneous Diseases*, relates an instance of mercurial eczema which came under his care after the patient had been ill with it ten weeks. The case had then become chronic. Its early history is not given, and no mention is made of the fact under consideration. In nearly all instances of eczema, especially where an extensive surface is involved, and where the contents of the vesicles are poured out freely upon the integument, it is truly "a sickly-smelling discharge;" but the odour is as unlike the one we are speaking of as is the perfume of the rose to the poppy.

Another pathological problem connected with the specific action of the mercury in the foregoing case is worthy of consideration, and that is, that although a most active salivation from the mouth was kept up for some days, the fetor, such as is present in ordinary cases of ptyalism from the internal exhibition of mercurials, was entirely wanting. The breath of the patient was thoroughly tested in reference to this matter by several medical gentlemen who saw the case at different times, and the result was as here stated.

It is well known that diabetes is accompanied with a hay-like scent or odour issuing from the body of the patient, and a similar sort of halitus is exhaled from the lungs.* In the hectic fever of phthisical subjects there is an odour like acetous acid almost invariably prevalent in the atmosphere of the apartment, and it requires no little perfumery to neutralize it. In typhus, also, the experienced and observant practitioner would rarely mistake the disease, even if he were led blindfold to the bedside, and relied upon the impression made upon his olfactories, as the only medium through which to form a diagnosis. A still stronger illustration of the idea before us may be found in the mouse-like smell which is always exhaling from the head of a child diseased with porrigo favosa. In all these instances, and in others that might be adduced, there is an exhalation from the person which is *sui generis*.

Although upon the spot where the eruption first appeared, the epidermis was thinner than in some other regions, yet it must have materially hindered the process of cutaneous absorption. And it is a curious fact that a plaster covering so small a space, and composed as it was of two ingredients, by no means in a state of minute division compared with what they were susceptible of, should have parted with a quantity of its morbific properties sufficient to produce such a violent shock upon the whole system. The dose was certainly too small for appreciation; and the case affords a good illustration of the absorbent power of the skin by what is termed the *iatraleptic method*, even under circumstances unfavourable for such action.

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* Good's Study of Med.

BOSTON, *January*, 1851.

ART. X.—*On the Topical Application of Chloroform.* By JOHN H. RAUCH, M.D., *of Burlington, Iowa.*

WHILE I was attending the clinical lectures at the Pennsylvania Hospital, during the winter of 1848 and 1849, the attention of the class was called by Prof. Wood, who was then the attending physician, to a case of facial neuralgia, which had proved rebellious to the ordinary remedies. In this case, the Prof. prescribed the topical application of chloroform, with the most decided relief to the patient, at the same time stating that he had been led to do so by the favourable report of Dr. Hays, who had made use of the application in a similar case with the most happy results. This was the first time I witnessed the external application of chloroform for the relief of neuralgia. During the summer of 1849, I had various opportunities to test its merits in relieving pain of that character, the results of which were so satisfactory that I am induced to enumerate some of the most striking cases.

CASE I.—A young lady was suffering acutely from a violent neuralgic headache. A flannel cloth was saturated with chloroform, and applied to that part of her head most affected; the pain ceased almost instantaneously.

CASE II.—An elderly lady had been suffering, in a most excruciating manner, from a neuralgic pain in the left shoulder, and side of the neck. The application was made as stated in the last case, and she was relieved as if by magic. She had no return of the pain.

From that time until the present, I have almost daily made similar applications, with nearly the same result. In some instances the relief did not prove permanent, but all that was necessary in such cases was a repetition of the application. Generally speaking, I found that it gave relief to all headaches not dependent upon a derangement of the *primæ viæ*, and to all pains not very deep seated. When first applied (so as to prevent its evaporation), it produces a cooling sensation, followed by a feeling of warmth, which is gradually increased to a sense of burning and smarting, which, however, is easily bearable. It produces redness of the part to which it is applied, which is speedily dissipated upon the removal of the cloth, leaving the skin harsh and disagreeable.

Owing to the sudden evaporation of the chloroform, its transient effect, and the roughness and harshness of the skin that were produced by its application, the idea of incorporating it with some other substance that would obviate these objections to its external application occurred to me. In olive oil, I found this desideratum. To effect a more minute union of the oil and chloroform; I added aqua ammoniæ, which produced a beautiful milky white emulsion, nearly similar to the volatile liniment, but not so consistent and white. The addition of the aqua ammoniæ seems to add to the efficacy of the chloroform; at least its counter-irritant effect is increased by it. So far, all succeeded admirably, and it only remained for me to give it a trial; an opportunity offered in the person of an "old lady," upon whom I had operated for cataract, who, in consequence of being compelled to remain in a recumbent position, after a few days complained of a severe pain in the small of her back. A woollen cloth was saturated with the liniment, and applied by means of friction; in a few moments the pain ceased and never returned.

Besides the advantages already stated of this preparation, it is not so expensive as the chloroform alone, and according to the result of my experience it is more efficacious, giving relief sooner, and its effects are not so volatile. The proportions in which I employed the different ingredients at first were equal, but afterward I graduated them, according to the effect desired. When I desired a powerfully counter-irritant effect, I increased the quantity of ammonia and chloroform, and diminished the oil, and *vice versa*. In some instances I have been deceived as to its results, owing to the chloroform being of an inferior quality, and the aqua ammoniæ of not sufficient strength. Care must also be taken that the oil is not rancid, as it may nauseate, especially when it is applied to allay nausea and irritability of stomach. I applied it by means of a woollen cloth, folded in such a manner that the internal folds were completely saturated with the liniment, while the external were dry, thus preventing its evaporation. Oil silk cloth has been recommended by Dr. Hays to be placed over the saturated cloth, when chloroform alone was applied, but this is not always at hand, thus making the cloth prepared in the manner stated preferable. Immediately after the cloth has been saturated with the liniment, it is to be applied. At first it necessarily feels cool, followed in a few moments by a sense of warmth, which increases until it smarts and burns so severely that it can with difficulty be borne, continuing to increase for the space of about ten minutes, when it gradually diminishes, and is followed by a pleasing coolness, and, if there was pain in the part, with relief of it. When the application is found to cause more pain than is agreeable to the patient, it can be removed, or its position changed. Upon removal of the cloth, the part is found red, and in many instances vesication takes place. When it is desirable to produce mere rubefaction, it is sufficient to apply it by friction, or to allow the cloth to remain but a short time, as vesication will take place if allowed to exhaust its strength. This is not always the case, as it will depend to what part of the body, and to whom it is applied, the skin being more delicate in some than in others. If the pain should continue, it will be necessary to repeat the application. It will be seen that it combines a rubefacient and powerfully counter-irritant effect with an anodyne. Where a speedy effect is desired, it is far more beneficial than either a sinapism or blister, and is easier of application, especially in children, where great difficulty is experienced in retaining a sinapism or blister a sufficient length of time to produce the desired effect, in consequence of their screams and endeavours to remove them. The relief of the pain, and the slight inhalation of the chloroform escaping from the cloth, produce such a pleasing sensation, that I have often seen patients fall asleep immediately after its application. Having thus detailed its physical effects, I shall proceed to relate some of the instances in which I have beneficially employed it.

CASE III.—This was a case of sciatica of long standing, in a patient about forty-five years old, who had become quite emaciated from long-continued suffering. He could with difficulty dismount from a horse he had been riding, in consequence of pain. After the application of the liniment, he was relieved from pain, attended to some business, and remounted his horse with greater ease than he had dismounted. I do not know whether it gave him permanent relief or not, as I have not seen or heard from him since.

CASE IV.—This was also a case of long standing, in an old dyspeptic, who had occasionally suffered severely from gastralgia. The liniment was applied, with almost instantaneous relief. What was singular in this case is that the pain never ceased when the usual remedies were applied, but did so upon his drinking from Oss to Oj of warmed milk.

CASE V.—Having been called to the country to see a woman who was suffering from pneumonia, with a full bounding pulse, great pain, and difficulty of breathing, I decided upon bleeding her, and, while making preparations for so doing, I found that the fleam of my lancet was broken, and, not having a thumb lancet with me, was prevented bleeding her. Having some of the liniment with me, it occurred to me that it might relieve her pain. I applied it to her chest for about fifteen minutes, repeating the application several times until vesication had taken place, and to my satisfaction she soon breathed more freely and easily, and before I left her was free from pain, her pulse became more natural, and in a short time she fell asleep. This, with a purgative, was all the treatment that was found necessary. I left some of the liniment with her, so that she might have it applied in case the pain should return, but this it did not.

The cholera breaking out here in the early part of the month of July, I was impressed with the idea that the liniment might be beneficially employed as an external stimulant, counter-irritant, and anodyne. I made the suggestion to my friend Dr. Lowe, who concurred with me, which resulted in our determining to give it a trial the first opportunity that should offer.

CASE VI.—The subject of this was a child seven years old, who was in the collapse stage when we were called to see her. Her pulse was so indistinct that it could not be counted, and was easily compressed; the skin was shrunken, and covered by a cold perspiration; her extremities were cold, with some warmth of body; the countenance presented a peculiar ghastly appearance; the eyes were glassy, and surrounded by a blue circle; the lips were livid, with occasional cramps and pain in her stomach and bowels, and vomiting. We applied the liniment over her body and extremities by friction, and saturated a cloth with it and placed it over her stomach and abdomen. This relieved the pain and vomiting. In about half an hour after the first application, the pulse became more distinct, so much so that I could accurately count it, warmth returned to the extremities, and there seemed to be some hope: at least it encouraged us to persevere. The benefit that she seemed to derive from the liniment was only temporary, however, and, several hours after, she died. Whether the favourable symptoms I have here recorded were caused by the liniment, the medicine that had been administered internally, or a reaction that was the precursor of death, I am not prepared to say. There was, however, something gained; the case was apparently a hopeless one when first seen; we had at least the satisfaction to know that her sufferings were relieved by it. In this case I first observed the pain over the region of the heart, which I found always a fatal sign; the suffering from this was also relieved by it. The mother of this child died, after an illness of eight hours, the day previous to the child's being taken.

CASE VII.—An elderly gentleman, a relative of the child last mentioned, who had been nursing it, was seized with purging and cramps early the next morning after the death of the child, and had had a number of dejections before he was seen. Cartwright's prescription was given him, which for a time allayed all his symptoms. Toward noon he was seized with great pain and sickness of stomach. The liniment was applied over his epigastrium, and in a short time he was relieved. The following powder was also given him every half hour: ℞. Morphia gr. ¼; Camphor grs. ii; Calomel grs. ii. He speedily recovered.

CASE VIII.—A young married lady was seized with a violent pain in her stomach and bowels, and diarrhœa. She was greatly prostrated by the excessive discharges, and suffered intensely from pain and sickness of stomach. The liniment was freely applied, with relief. The powder of morphia, camphor, and calomel was given her every half hour, and she recovered rapidly.

CASE IX.—A young man, during the night, was taken with diarrhœa and cramps. I saw him a few moments after; applied the liniment, which gave him almost instantaneous relief.

CASE X.—An elderly gentleman, who had been attending upon a friend in an attack of cholera, complained of pain in his bowels and diarrhœa the day previous to his being attacked, and had taken some medicine. I saw him, the evening previous to his being attacked, in a small social circle; he seemed to be as pleasant and lively as usual. At 3 o'clock, A. M., next morning, I was called to see him, and found him in the collapse stage; he had had but two dejections, and emesis had taken place but once, accompanied by occasional cramps and pain. I applied the liniment freely over his stomach and abdomen, gave him the powder already spoken of, and administered the enema. In a few moments, he said he felt better, and I had not been with him more than twenty minutes, when he said he was free from all unpleasant symptoms, and that I should return to bed. His pulse and skin were in a better condition than when I first saw him. He still persisted in my going to bed, and in saying that he felt perfectly well. To gratify him, I left him for a few moments, but soon returned to administer the powder. I found him as I had left him, with no sickness of stomach, no pain, and no inclination to defecate, but soon found that there was a change taking place, and that he was sinking, his skin again becoming cold and shrunken. The liniment was assiduously applied all over his body and extremities by means of friction; brandy, ammonia, and capsicum were given him; he was placed in a warm bath, bricks heated and placed in bed with him, and all manner of internal and external stimulations that I could possibly think of were employed. It seemed to produce little effect until 7 o'clock, when he appeared to rally; his pulse became more distinct, warmth again returned to the extremities and surface of the body, which continued to increase until 12 o'clock, M., when he again began to sink until he died, during the afternoon. Hopes were entertained of his recovery from 7 until 12 o'clock; he, however, during this time, said he would not recover, was perfectly calm, did not seem to be alarmed, conversed with a clergyman about his spiritual affairs, and dictated a will. He had scarcely finished his will when he began to sink, and in an hour afterward began to complain of the peculiar pain over the region of the heart that I have described before; this was also relieved by the liniment. After I saw this, I ceased to administer medicine. I asked him whether he suffered: he answered, No. Said he felt chilly, and wished to sleep. He would fall into a doze, and when aroused therefrom, would exclaim, "Just let me sleep!" And thus he died without suffering—falling, as it were, into his final sleep.

This case goes to prove the fallacy of the assertion that, if you check the discharges, you will check the disease. In this case calomel was given in two grain doses every half hour, until he began to sink a second time. All medicine that was given him was retained.

It is unnecessary for me to enumerate more cases, as those I have already stated sufficiently prove the efficacy of the liniment. They were the first cases it had been employed in, and at an early period after the epidemic had made its appearance. I made use of it in all cases I was called to see, and with the same results, and can with truth say that the mode of treatment that I have detailed—*i. e.* the powder of morphia, camphor, and calomel, the enema of laudanum, starch and tannin, and the liniment—was as successful as any that was employed here. Such was also the experience of my friends Drs. Lowe and McLaren.

In diarrhœa and dysentery I have beneficially employed it; also in bilious colic, applied over the region of the liver, stomach, and duodenum. In neuralgic colic it has given great relief; also in flatulent colic of children, and the various derangements of the stomach and bowels incident to them, by rubbing a small quantity over the stomach and abdomen. It is far preferable in cases of this character to opiates, as the same effects are produced, and in a more speedy manner, without the unpleasant results that often follow their administration. It also has this advantage: that it can be applied when there is an idiosyncrasy that would contra-indicate their exhibition. The following case will prove its efficacy in colic. This is one of the most striking out of a number:—

Case XI.—At about two o'clock in the morning, during the prevalence of the cholera, I was aroused from my slumbers by a friend who was suffering severely from colic. He threw himself upon my bed, and owing to the pain and fright, thinking he was about having an attack of the cholera, he could not make himself intelligible; after performing various gyrations, he made me understand what was the matter with him. I immediately applied the liniment, (which at that time I always had prepared,) and in fifteen minutes after the first application, he was sound asleep. Lest he should have a return, I slept with him, and next morning when I awoke he was gone. He had gone to Fairfield, fifty miles in the interior, to attend to some business, perfectly well. After his return, he told me that he had never had anything to operate on him so beneficially, his pain ceased almost instantaneously, and his sensations were delightful when about falling asleep.

In a case of infantile pneumonia, I employed it with the same success as in Case V, and I do think that it might be beneficial in croup and laryngitis—care, however, being taken, when applied, that the patient do not inhale too much of the chloroform. I have used it in a number of cases of angina with advantage, and I have found it to afford the most decided relief in toothache in many instances. In a case of spinal irritation, and two of dysmenorrhœa, the most beneficial results were derived from its application. In several cases of the most violent earache, the chloroform, dropped into the ear, gave the most decided relief.

Another and a most important and valuable indication that I accidentally discovered in chloroform is that of giving relief to the pain of burns. Having burned myself, and suffered intensely from it, I accidentally saw the liniment, and reasoning *à priori* that it relieved other pain, it might possibly relieve this, the application was made, and my anticipations were realized. The pain for a few moments seemed to be increased; but it soon began to diminish, and entirely ceased. While reflecting upon the result of the last experiment, and the important indications that might follow, it occurred to me that the application of the chloroform alone, and in such a manner as to allow its free evaporation, might be more beneficial. On trial my conjectures were verified; the pain of the burn was relieved, and the cooling sensation produced by the evaporation of the chloroform was truly pleasant to the patient; but it was found necessary to repeat it, and left the burn feeling harsh and disagreeable. To obviate this difficulty, I added olive oil and lime-water to the chloroform, equal parts, and applied it by means of a quill. This I found far more beneficial than the chloroform alone. Applied in this manner, it fulfils several important indications, as its effect is longer continued, and when the chloroform has evaporated, it leaves the oil to protect the burn from the influence of the atmosphere. I have not had an opportunity to test its merits on an extensive burn, but have every reason to believe that the result would be the same. In large superficial burns in children, where the shock to the system is often so great that they never rally, I think the liniment with ammonia might be beneficially employed.

Being anxious to give it a fair trial, and not having an opportunity, I scalded my left arm; the pure chloroform was applied, so as to allow its free evaporation; it had scarcely touched the arm when there was a change from the burning pain incident to a scald to a sensation of coolness, and almost entire freedom from pain; this, however, lasted only until the chloroform had evaporated, and the part to which it had been applied felt as if an astringent had been applied to it. The pain continuing, the liniment, composed of chloroform, olive oil, and lime-water, was applied, the relief was more permanent, and several applications entirely freed my arm from pain. The next day the skin peeled off. In a number of instances similar favourable results were obtained.

ART. XI.—*Surgical Cases.* By R. McSherry, M. D., U. S. N.

CASE I.—*Chronic Inflammation and Abscess of Head of Tibia. Operation with Trephine successful.*—I was invited by my father, Dr. McSherry, of Martinsburgh, Va., to operate on the leg of a coloured patient, John Coleman, a slave, who had been more or less disabled for sixteen years by a blow from the head of an axe while engaged in chopping wood. The immediate pain from the accident was very great, and permanent disease followed; but its progress was slow and by no means uniform. At times he would pass weeks, or perhaps months, engaged in light duties, without material suffering, but at intervals he would have returns of pain sufficient to disable him and to require medical treatment. During some of these attacks, he was treated actively by bleeding, purging, &c., generally, and by blisters, fomentations, poultices, &c., locally. On one occasion, a long incision, down to the bone, was made over the seat of the pain, bringing, however, but a transient mitigation of the sufferings, which, during paroxysms, were almost intolerable. In the course of time, these paroxysms became more severe and longer continued; the patient found himself not only completely disabled, but subject to intense sufferings, which yielded to no treatment. He suffered agonies of pain, without rest or mitigation, day or night; the pains, in fact, were aggravated at night, and laudanum, given in doses of from one to three hundred drops, seemed rather to stimulate his sensibilities than to relieve his sufferings. When I was called upon to operate on him, he had not enjoyed a night's sleep for many weeks; he was anxious to be relieved at any sacrifice, and would have willingly undergone amputation if it had been considered necessary. The tibia by this time had grown somewhat into the shape of a South Sea war-club, so greatly was the head enlarged. After examining it with my father, and my friend, Dr. E. B. Pendleton, I made a crucial incision over the most enlarged portion, dissected back the flaps, and prepared the way for the trephine by cutting around its circumference with a strong sharp knife into the substance of the bone. Then, with the trephine, I removed a portion of largely-thickened eburnated bone with the attached cancellous structure, which was bathed in pus. There was no flow of purulent fluid, as the quantity was very small. I introduced a tent, applied light dressings, and left the patient much relieved. He enjoyed a good night's rest after the operation, for the first time for a month, and had a rapid recovery. In three months, he was at work in a tannery.

Sir Benjamin Brodie, in his article on "Some other Diseases of the Joints," says: "Occasionally chronic inflammation of an epiphysis terminates in the formation of an abscess in the centre of the bone, but contiguous to the joint. An abscess of this kind is attended with an extraordinary degree of suffering, such as not only justifies amputation, but that induces the patient cheerfully to submit to the operation. Under certain circumstances, however, he may obtain the desired relief without the loss of the limb."

Sir Benjamin then details some cases, similar to the one here reported, in which amputation was performed, and others in which the affected limbs were saved by trephining, an operation he was led to adopt from the light thrown upon the cases by the examination of the diseased structure of the amputated limbs.

I operated on John Coleman in April, 1847. He has since suffered with transient pains in the enlarged bone, but they are comparatively very trifling. On one occasion he had to be relieved by an issue on the cicatrix. He says the leg is rather weak, but he is able to pursue habitually his ordinary occupations.

CASE II.—*Removal of Diseased Testis.*—On the 29th of August, 1849, I was requested to operate on Mr. H., a student of medicine, for a chronic disease of the left testis resulting from injury. Before resorting to the *ultima ratio* of the knife, I inquired into the history and treatment of the case, from which I was satisfied not only of the expediency, but of the necessity of the operation. That his life would be saved by it we had reason to hope, while without it, death was apparently inevitable, and that at no very distant period. I learned from his physicians and himself that his disease dated from the month of February, 1848, after having been accidentally struck on the testis by a foil in fencing. Severe suffering followed the blow immediately, violent pains shooting along the nerves to the loins and down the thigh; but as they soon left him he thought no more of the injury, until, in the course of some weeks, pain and swelling in the gland recalled his attention to it. He was subjected to the ordinary course of treatment in such cases, locally and generally, but the disease, so far from abating, grew steadily worse. Mr. H.'s health had been delicate previously; he had been obliged to abandon his collegiate course on account of long-continued functional disorder of the stomach and liver, and, indeed, I believe during his whole life the *vis vitæ* had been below the average standard; yet after leaving college his health improved sufficiently for him to engage in the study of medicine. His professional studies, however, were soon arrested by the progress of his disease; the old train of dyspeptic symptoms reappeared, bringing with them so much suffering, moral as well as physical, that life became a burden to him. In this condition, more than a year after the injury, he consulted an eminent surgeon, and suggested, himself, excision of the testis. By this time the scrotum and other tunics had become so much hardened and increased in bulk that it was difficult, or perhaps impossible, to detect the exact condition of the gland itself. The Doctor, under the impression that the disease was confined to the investments, said there was no necessity for an operation; he put the patient on an alterative course of the iodide of potash, and while under his care laid open a sinus in the scrotum. At the end of five weeks, Mr. H. returned to his home without any amendment; he suffered for some months longer, until, sinking under "hope deferred," he determined that the peccant organ should be removed. He requested that I should perform the operation. Repairing to his house, accordingly, I found him pale, feeble, and emaciated, worn down in mind and body, desponding. He had no hope but in the knife, and his medical advisers agreed with me that the case would end in hectic, unless soon relieved. We therefore prepared him for the operation. The scrotum was greatly enlarged, and covered with fungous granulations; the testis was immovable; we could not define its limits. I suggested to the patient that if, on cutting through the hypertrophied scrotum, the gland should be found safe, we might give it protection from the adjacent skin; but the first incision proved that the connection was too close for separation. Having shaved off the hair, I made two long elliptical incisions from the region over the emergence of the cord at the external abdominal ring down to the inferior extreme of the scrotum. The exposed parts presented but one common mass, so, clearing away the loose tissues about the cord, I divided it, after having thrown around it a double ligature, which caused considerable, but not excessive pain. By a slow dissection the mass was removed. The cord was very much enlarged, almost to the size of a man's thumb, but the ligatures prevented hemorrhage; the enlarged scrotal arteries required ligatures.

We laid open the diseased mass, and found the structures so completely blended that there was no distinction of parts. It appeared to be one hard tumour, marked externally by superficial sinuses and fungous granulations, but internally there was no visible or appreciable distinction between the gland and its tunics, one tissue and another. The whole was of about the size of a large orange.

We applied simple water dressings, and left our patient cheerful and hopeful.

I saw him on the 13th of September, and found him in all respects improved; the end of the cord external to the ligature formed a button-like tumour, which I removed with the knife without pain and with but little hemorrhage. The cord was a white homogeneous structure, in which the arteries alone were to be distinguished. There was no pain along the track of the cord either while at rest or under pressure. The whole wound was healing kindly by granulations.

In December, I heard from Mr. H. He had had swelling of the parotid glands, which he attributed to taking cold; the swelling disappeared, but the remaining testis became enlarged. This had been much wasted during the disease of its fellow, but in time it regained the natural size. A mild course of blue pills and iodide of iron, with a well-regulated diet, corrected a train of dyspeptic symptoms which returned upon him some months after the operation.

At this time, March 1851, he is in good health, with no drawback but from occasional recurrences of dyspepsia. I am disposed to look on the disease of the testis as a case of scrofulous degeneration without essential malignancy.

BALTIMORE, *March*, 1851.

REVIEWS.

ART. XII.—*Operative Surgery.* By FREDERICK C. SKEY, F. R. S. With numerous wood-cuts. Philadelphia, Blanchard & Lea, 1851: 8vo. pp. 661.

THE title-page of this book very naturally suggests the inquiry, Who is Mr. Skey? Nor is the question one of mere idle curiosity. In the preface, he says, "It may be charged against me that I have expressed freely, and perhaps more authoritatively than I am entitled, my own individual opinions, and have made little reference to those of others. In answer to this charge, I have only to remark, that I do not profess to give the multitudinous opinions of other men, and yet I have not withheld them. I have quoted the opinions entertained by most of the eminent members of the surgical profession, so far as a general intercourse and an extensive acquaintance have enabled me to command it. The character of my mind is not attuned to authority, and it has been my practice, no less than my principle in life, to think for myself. A tolerably extensive intercourse with disease has led me to the opinions which I have embodied in the following work: I profess no more."

But, inasmuch as Mr. Skey appears in the character of a *teacher*, and speaks authoritatively concerning matters of the highest importance, we have a right to ask for some sign by which we may know him to be a true prophet, and not an impostor—one really commissioned to minister at the shrine of Apollo, and to interpret his oracles. Perhaps, modesty may have induced him to withhold his credentials, but for the information of his and our own readers, we must disregard his incognito, and announce him as *one of the assistant surgeons of, and lecturer on Anatomy to, St. Bartholomew's Hospital, London, and member of the Royal College of Surgeons of England.* He has, therefore, a right to our respectful attention.

The occasion and scope of this publication are thus declared by the author in the preface: "The following work was undertaken in compliance with the advice of some professional friends, who equally felt with myself the want of a book on operative surgery, which might become, not simply a guide to the actual operation, and embrace the practical rules required to justify the appeal to the knife, but would embody, at the same time, such principles as should constitute a permanent guide to the practitioner of operative surgery, and without which all claim to its scientific character is lost." In accordance with this manifesto, the author aims, throughout the book, to inculcate correct principles as the basis on which all operations should be predicated.

The volume before us is an American reprint of the London publication.

We do not design to pass in review all of the many subjects which Mr. Skey has embraced in his book—they are too numerous, for his list will be found to include, probably, all of the operations which a surgeon has occasion to perform. We shall, therefore, call the attention of our readers to some of those which seem to us to be most important.

The account of the particular operations practiced is introduced by some general observations on various interesting and important matters connected with operative surgery, as the *preparatory treatment*, and the *after-treatment*, the *etiquette of consultations*, the *individual responsibility of the operator*, &c.

The author's experience of *Chloroform*, also, is given at length, and the propriety and importance of employing it are unequivocally enjoined. His observations on this subject were quoted in full in the last number of this Journal, at page 498, and we need not repeat them now.

Mr. Skey is very earnest in impressing upon his readers the true relation which should exist between operative and medicative surgery; and his remarks are well worth an attentive consideration. The *cacoethes secandi* is not confined to London; there are, unhappily, itching palms everywhere, whose owners cannot, it would seem, overcome the desire to employ them in this heroic manner. The scalpel to them, like the weird dagger to the murder-plotting Macbeth, becomes instinct with a fatal and irresistible eloquence, impelling them to action, and marshalling them the way; it whispers to them the profit and renown which the deed will create for them, and fills their "heat-oppressed brain" with crimson glories; it presents itself to them, its handle towards their hand, inviting their clutch; and, finally, despite their conscience, or their conscience lulled to sleep, they do the deed. To such we commend Mr. Skey's teachings.

In the *second chapter*, the *Implements* of the surgeon are described and commented on, together with the proper modes of employing them.

It is impossible, of course, and unnecessary, to bend to a single uniform rule the multiform tastes and fancies of surgeons with regard to the dimensions and shapes of their knives, and their methods of holding and using them. Each one must be allowed to suit himself in these particulars. Many operators will, we doubt not, approve of the knife which Mr. Skey prefers, and will find, too, that they can employ it most advantageously by wielding it as he advises; while others will choose an instrument differently shaped, and will handle it otherwise.

He recommends very strongly the use of a *silver blade*, whenever, in the progress of an operation, it is of importance to avoid giving rise to the effusion of much blood, and thereby obscuring the part which is being operated upon. "Whether for the exposure of large arteries, or the removal of large tumours, or in hernia, the escape of blood is one of the chief obstacles to the progress of the operation; and when the quantity is large it ceases to be a mere inconvenience, and becomes a serious evil. Much bleeding from small vessels may be avoided by the use of a blunt knife, which lacerates coarsely, instead of minutely. I was indebted to Sir Benjamin Brodie, in the early part of my own career as an operative surgeon, for this useful hint; and I have seen the benefit derived from the employment of a knife with a silver blade, too frequently, to hesitate in recommending it as a valuable appendage to the operating case"—p. 46. Accordingly, in the following pages, the author very frequently directs the use of this instrument. Some other surgeons advise it also. Probably, it will be well for those who are just commencing to operate, to adopt this safe advice; but when self-confidence has been acquired by familiarity with danger, we cannot see the advantage of resorting to an expedient which involves some loss of time and bungling; excepting, perhaps, when operating upon parts in which there is extreme liability of doing serious mischief by the employment of the common scalpel. But, as we said before, let each one, in this matter, judge for himself.

This chapter contains many very sensible and practical remarks concerning the direction and the manner in which *incisions* and *dissections* should be made, the preparation of the divided parts for the subsequent dressings, and the treatment which is most conducive to the healing of wounds thus made. We are particularly pleased that Mr. Skey objects to the fierce and uncompromising onslaught which the late Mr. Liston made upon *poultices* and *adhesive plaster*. We agree with Mr. Skey in condemning the application of the poultice as an *exclusive* article of dressing when warmth or cold is demanded; in very many cases, perhaps as a general rule, we should prefer the topical employment of water, simple or medicated; but we do most unhesitatingly contend that the latter is much inferior to the former, when it is desirable to *maintain a uniform temperature for a length of time*, as, for example, for the purpose of promoting the maturation of an abscess. And, moreover, in hospital-practice, and among our poorer patients, who cannot command constant and kind attendance, the poultice cannot rationally be dispensed with in favour of the water-dressing, not even during the daytime, and far less at night. We concur with the author, also, in the opinion that Mr. Liston's "isinglass plaster fails in giving the support obtained from the common adhesive plaster spread on linen;" and, as to the greater probability that *erysipelas* will be induced by the latter, rather than by the former, in any situation, we do not believe it; we have used the adhesive plaster in innumerable cases, in hospital-practice and in private, and we cannot recall a single instance in which such a result followed.

Mr. Skey concludes this chapter by devoting a page and a half to the subject of *tetanus*, on which he throws no light whatever, but rather renders our lamentable darkness still more hopeless, by the assurance that "anæsthetic agents, which are invaluable in their power to arrest suffering, possess not the slightest power in contending against the disease itself" (p. 67), as he discovered during the treatment of a recent case of tetanus. He makes no mention, moreover, of the occasional cures which have followed the employment of tobacco, cannabis Indica, the hot-bath, counter-irritation along the spine, &c. We think that it would have been far better for Mr. Skey not to broach the subject of tetanus at all, inasmuch as it forms no necessary part of a treatise on operative surgery, and because his limits are too circumscribed to permit of any waste upon extraneous matters. But, since he has thought it proper to treat of this affection, we regret that he has not, for the benefit of those who may make his volume a reference-book, been more precise in his description of its symptoms, and more communicative concerning its treatment; and as the establishment of correct principles of treatment is a prominent aim of his labours, some remarks concerning the most received *pathology* of this disease would have been very appropriate.

In his Lumleian lectures for 1849 (vid. *London Medical Gazette*), Dr. Todd gives some very instructive views upon the nature and treatment of this terrible malady. He thinks that it is due to an altered state of the blood, induced either by the introduction into it of some poisonous material from without, as in *endemic* tetanus—or by some general vitiation of the nutritive processes, as is illustrated in the *idiopathic* variety—or, finally, by a morbid action occurring in a wound, as in *traumatic* tetanus. The blood, thus changed in its physiological properties, produces a modification of the nutrition of the spinal cord, and thereby occasions an "exalted polarity" of this tract—a state which, in some cases of traumatic tetanus, may be communicated by an inductive process from an irritated nerve in the wound. His opinions derive support from the similarity which exists between this disease and trismus infantum, laryngismus stridulus, and the artificial tetanus produced by strychnia. The symptoms are certainly not *dependent* upon congestion or inflammation of the spinal cord; for, although these states are sometimes found both in idiopathic and in traumatic tetanus, yet cases often occur in which they are entirely wanting; we have met with two instances of this kind, in a very limited number of cases. Dr. Todd says, "I have examined, with the most scrupulous care, the spinal cords of rabbits which died in strong tetanic convulsions, kept up for some time after large doses of strychnine; but I could not discover, even with the highest powers of the microscope, any indication of deranged structure." And he draws from his investigations of the subject the following inferences: "1. To support the strength of the patient as much as possible, so as to oppose the exhausting effect of the convulsive paroxysms," inasmuch as death takes place, he thinks, not usually from any disorganization of important organs, or from the arrest of functions essential to life, but from gradual exhaustion; "2. To remove all possible sources of irritation or of depravation of the blood, in vitiated secretions, bad diet, impure air; 3. To diminish and reduce the exalted polarity of the nervous centres to their normal condition, and, if possible, to effect this by means which will not reduce the powers of the patient." The third indication has hitherto baffled our efforts, and Dr. Todd thinks that this has been partly owing to the fact that our treatment has been entirely empirical, and that no systematic plan has been persevered in, in a sufficient number of cases, to permit us to arrive at any legitimate conclusion, excepting perhaps in the instance of opium, which has failed signally. He recommends the application of *cold to the spine*, and *the inhalation of Chloroform*. The former he advises from his own experience of its value; it should be employed in the form of *ice contained in ox-gullets placed along the spine;* its effects should be most carefully watched both in order that it shall act sufficiently, and that it shall not produce too sedative an influence upon the heart. He has had no practical acquaintance with the operation of chloroform in tetanus; but from the facts that it has been successfully used in a few instances, and that it has prolonged life and annihilated sensation for a considerable time in many others, he is strongly induced to believe that, when its effects shall have been more carefully studied, and the rules for its administration more accurately established, it will be found to be one of the most reliable remedies which we possess. Its influence upon the action of the heart should be well watched.

In his recent treatise on "General Pathological Anatomy," vol. i. p. 153, M. Cruveilhier throws out a suggestion which may in some cases prove efficacious, as it did in an instance which came under his own observation. He thinks, as is usually taught, but contrary to the opinion of Dr. Todd, that death in tetanus is due to *spasmodic* closure of the glottis producing apnœa. Accordingly, in the case alluded to, he directed the patient to make *permanent efforts at voluntary action* of the respiratory muscles, at regular, natural intervals; the patient, being "full of energy and courage," did so, and recovered. In another case, this plan failed; but the man was not willing, or was unable to follow the advice given him. When his recovery was despaired of, however, "cool baths with cool, and subsequently cold, affusions were employed several times in the day," and he recovered.

The *third chapter* treats of *Dislocations*. Of this class of affections Mr. S.'s *definition* is defective. He says, "By the term dislocation is understood a displacement by violence of any part of the osseous components of a joint from the remainder"—p. 68. But to restrict thus the signification of the term is to exclude from the category of luxations all those cases of displacements which occur "*spontaneously*," i. e. by some change having been produced in the surfaces of the parts composing the joint, either before or after birth.

Cruveilhier's definition of the term luxation is the most comprehensive, and at the same time the most philosophical, which we remember to have seen: "A luxation exists at a joint, when the articular extremity of one of the bones has become so displaced that the contraction of the muscles cannot restore it to its normal position."—Op. cit. p. 395.

Before treating of individual dislocations, Mr. Skey considers the *principles* which should guide us in their management, and combats "certain opinions and a generally adopted practice which, in his judgment, are erroneous." He wishes to impress upon his readers the idea "that the muscles are the immediate agents of reduction, and not the surgeon, whose entire duty consists in placing the bone in a position to give them the opportunity of displaying this harmony of action, and of exercising a power even beyond that of the mechanical agents of extension." In this he is undoubtedly correct, and we did not suppose that any well-informed surgeon entertained any other opinion, excepting with reference to dislocation of the clavicle, some of the bones of the hand and foot, and others, upon which the muscles exert little or no influence in retaining them in their articular connections. The anatomy of the joints, in fact, will show in what cases this rule is departed from, and will account for such departure. For instance, the construction of the shoulder and hip-joints is such as to admit of very diversified and extensive motions of their respective limbs: the head of the humerus and of the femur are much exposed to dislocation from direct violence applied, and from the action of the powerful muscles which move them; yet the ligaments of these articulations are comparatively feeble, few in number, and so lax as actually to permit the articulating surfaces to separate from each other. But this defect, as it seems, on the part of the ligaments is compensated by the strength of the muscles which immediately envelop the joints, and which, acting upon the bones in all their motions, constantly guard against dislocation. Even in dislocation their conservative aim and tendency are manifest, although now, in consequence of the new position of the head relatively to its socket, the axes of contraction of the muscles with reference to these two points are also changed, so that their effect is reversed, and they tend to perpetuate the displacement, instead of approximating the parts of the joint. So soon, however, as, in the attempt at reduction, their original line of action is restored, by the more favourable position of the head of the bone, they again perform their natural office and draw the latter into its proper receptacle. Therefore, in a case of luxation at one of these joints, the surgeon cannot suppose that by his extension and other manipulations *he* actually restores the dislocated bone, for he must see, at a glance, that if he should continue these efforts after the head had reached a certain point, he would defeat his own aim, and would separate the articulating surfaces farther and farther from each other; accordingly, at this point he wisely ceases his tractions, or the muscles overcome them, and the dislocation is reduced, the bone being drawn in a direction contrary to that in which he has been operating.

But this mechanism of restoration does not apply to dislocations of the clavicle and some other bones, as before mentioned. Here the ligaments are numerous, comparatively, if not absolutely, much stronger than those of the other joints alluded to, and are in fact the real guardians of the articulations; while, on the contrary, the muscles which are inserted into their vicinity tend by their contraction rather to produce displacement, so that the surgeon must not only restore the bone to its proper place, but must also retain it there, by mechanical appliances, until the ligaments shall have regained sufficient strength to enable them to resist effectually the disturbing force of the muscles.

While we admit, then, with the exceptions specified, the correctness of the principle for which Mr. Skey contends, we cannot agree with him in the inference which he draws from it; viz., that the reduction of a luxation may not be *facilitated* by rotation or other movement impressed upon the head of the bone, in addition to the direct extension which is made upon it. We will cite as a case in point the one which he quotes as having occurred in his own practice, in which the head of the femur was thrown upon the pubis: he says (p. 118), "It was proposed by my colleagues to draw the head of the bone backwards, but chiefly outwards, by a side towel. I expressed my doubt as to the probability of success, and the attempt proved that I was right. The error consisted in the direction in which the extending force was being made; the principle was bad. The case was then given into my charge, and I made extension downwards and a little outwards." In this manner he succeeded in accomplishing the reduction. But if his colleagues and he himself had, *in addition* to the "extension downwards and a little outwards," passed a roller under the upper part of the thigh and elevated the head of the bone a little, *at the same time that extension was being made*, as Sir A. Cooper advises, we think that the restoration would have been effected sooner and with more ease both to the patient and to the surgeon. Such expedients may, we think, be often resorted to as *adjuvants* to direct extension, but not to the exclusion of the latter.

One of the most interesting questions connected with the subject of dislocation regards the reducibility of *old* luxations. Concerning this, Mr. Skey remarks, "It is impossible to lay down any positive rule with regard to the time beyond which an effort at reduction should not be made, unless we carry the question at once into a period of nine months, or a year or more; because, although our success may be improbable, the attempt is worth making, provided it be carried into effect with discretion, and it is very rarely that injury is sustained by the attempt, however painful or long continued; indeed, it is often followed by increased freedom of movement afterwards. Sir A. Cooper objects to efforts being made to reduce dislocations of long standing, and he has endeavoured to define the period at which the attempt may be made. He gives *two months to the humerus, and three months to the femur.* It would appear that the increase of difficulty in the attempt to reduce a bone dislocated three or four months arises rather from the increase of strength and firmness of the fibrous adhesions formed around the end of the dislocated bone, than from the condition of the muscles, which have probably attained their fullest degree of inorganic contractions, and have become partly absorbed at the end of two months"—p. 73. The existence of new growths in the old cavity he considers an obstacle of much less moment.

Now, we think that these observations are very well calculated to mislead those who may refer to this book as a guide in such cases, both as to the facility with which old dislocations may be reduced, and as to the propriety and expediency of making an attempt at their restoration. And the dangerous tendency of these opinions is much increased by the following paragraph: "The immense experience of Sir A. Cooper has failed to furnish a single case of serious injury consequent on the attempt to reduce any form of dislocation. He speaks, indeed, of contusions of the muscles, and lacerations of the skin, and insensibility of the arm; but no instance of serious injury is recorded, to awaken fear or distrust in the mind of the operator, or to create an alarm lest the effort should prove seriously detrimental to his patient"—p. 74. If Mr. Skey had but refreshed his memory and his judgment by the perusal of the opinion which Sir A. Cooper actually did express in the premises, he would have found that that distinguished surgeon did not entertain such views of the trifling amount of danger connected with the restoration of long-standing dislocations as those which we have just quoted. But he expressly says, "I believe that *much mischief* is produced by attempts to reduce dislocations of long duration in very muscular persons. I have seen great contusion of the integuments, laceration and bruises of muscles, and tension of nerves, inducing an insensibility and *paralysis* of the hand, occasioned by an abortive attempt to reduce a dislocation of the shoulder; so that in such cases, even when the bone has been replaced, it has often proved rather an evil than a benefit from the violence of the extension. I have also heard of cases occurring in the practice of others, in which the *whole side of the trunk became paralyzed* from injury to the cervical vertebræ during a violent extension: and of more than one instance in which the *axillary artery was ruptured;* and some of these cases were fatal. And there are plenty of cases on record *of fatal abscesses*, from violent attempts at the reduction of dislocated hips. *Mr. Skey* has mentioned a *fatal case of phlebitis* following protracted extension of a dislocated hip, during which one hundred and twenty ounces of blood were taken from the patient." (A. Cooper's *Treatise on Disloc. and Fract.* Am. ed., p. 68.) He further says, "I am of opinion that *three months after the accident for the shoulder, and eight weeks for the hip*, may be fixed as the period at which it would be imprudent to make the attempt at reduction, except in persons of extremely relaxed fibre, or of advanced age." (Op. cit. p. 69.) It would be very easy, although unnecessary, to cite other instances in which permanent injury or death has followed such attempts; sufficient evidence has been adduced to show that Mr. Skey has spoken with unwarrantable carelessness concerning this question, and that his own experience is entirely at variance with his assurances as to the absence of danger from the operation.

We agree with the author in the opinion that no definite time can or should be fixed, beyond which an attempt at the reduction of a dislocated bone should not be made. It is not so much a question of time, as of the condition of the new and the original resting-places of the disarticulated end of the bone. But his book affords no information to the inquirer as to how he may learn whether or not certain changes have occurred in the parts concerned, which render an attempt at restoration feasible, or objectionable, or decidedly improper. We apprehend that, as it is impossible to ascertain with certainty the condition of the new and of the old joints, the suggestion of Mr. Bransby Cooper will be found to be the most reliable in practice. This gentleman says, "Should not the principal consideration be, the condition of the new joint, especially as to the degree of motion of which it is capable? for by this a fair judgment may be formed as to what extent nature has altered the surfaces of the bones in contact to fit them for the functions of a joint in their new situation. If any useful motion can be performed, then I believe it may be considered as ill-judged to attempt to restore the dislocated bone to its former articulating cavity, for it seems invariably to happen that, as a new joint becomes fitted for use, so the structures of the old one are rendered incompetent for restoration. Nor do these changes depend so much upon time as upon the attempts which have been made to use the supplementary articulation: for if an unreduced dislocation be maintained in a state of perfect rest, the changes which take place are very slow, and in such cases months may elapse, and yet it may be quite proper to attempt reduction; while, on the other hand, if continued efforts have been made to employ the limb, and a useful motion acquired, more permanent injury is likely to be sustained by restoration of the bone to its original situation than if it be allowed to remain and means are employed to perfect the adaptation of the newly-formed structures." (Ed. Sir A. Cooper, op. cit. p. 69.) The objection on the score of pain inflicted on the patient is no longer a necessary element in the consideration, but the dangers above enumerated are at least not diminished by the use of anæsthetic agents; they are rather increased, because we are deprived, by the patient's insensibility, of the information which his protective and defensive sensations might otherwise afford us, as to the probable or actual infliction of injury.

The reader will find a very full and satisfactory account of the anatomical conditions of the old and new joints in unreduced dislocations, in the volume of Cruveilhier before cited.

Mr. Skey has omitted all mention of the assistance derivable, in such cases as those we have been considering, from the subcutaneous section of the ligamentous, tendinous, and other recent or original structures by which the restoration of the bone is opposed.

We must pass over the author's observations on individual luxations; they are full, and in the main correct, and may be consulted with advantage.

Nor shall we make any comments on the chapter devoted to the subject of bandaging, but proceed to that on *fractures*. As in the chapter on dislocations, so in this, the remarks on individual fractures are preceded by some general considerations applicable to this class of injuries.

Mr. Skey devotes some space to the question as to the influence of the muscles upon the direction and degree of the displacement of the fragments of the bone. He very properly, as we conceive, contends that the character and direction of the displacement depend first upon the mode of action of the violence which produces the fracture, by which the fibres of the bone are ruptured in a certain direction; and, secondly, upon the sudden contraction of the muscles inserted into the fragments, occurring synchronously with the fracture. We think it highly probable that, in the case of oblique fractures produced by indirect violence, as, for example, of the femur by a fall upon the foot, the particular direction of the obliquity is due to this synchronous spasmodic muscular contraction, one set of muscles, or one muscle, predominating over the others in power, and that the consequent displacement is occasioned, and its direction determined by the same agency, aided, of course, by the continued action of the extraneous force. We cannot, by any other supposition, so satisfactorily account for the fact that in different instances the direction of the fracture will be different, the cause, and, so far as we can ascertain, the mode of its operation, being the same in all. Mr. Skey admits, "the shortening of the limb in fractures is, without doubt, owing to the action of the muscles immediately consequent on the accident; but I contend that this violent action does not continue, as in the case of a dislocation, and I doubt very much whether it is the cause of the prominence of the upper end so frequently found. From the period of the accident, however, if neglected, the muscles of the limb commence a process of slow retraction, which will extend over many days, and even weeks, as occurs in some rare examples of fracture of the neck of the thigh-bone, without early symptoms"—p. 143. Now, as to the *duration* of the muscular contraction, we apprehend that it will continue so long as the muscles concerned are sensible of the existence of a resistance to be overcome, in order that they may assume the greatest degree of shortening of which their fibres will admit, or until their action is opposed by an amount of resistance which they cannot overcome, or until their contractility is exhausted. The obstacles against which they have to contend are the weight of the portion of the limb to be moved, in some instances the impacted state of the fragments, the resistance offered by those fibres of the muscular, ligamentous, and other structures which remain attached to both fragments of the bone, the opposition of other muscles, &c.; these impediments being so various in degree in different cases, the effect of the antagonistic muscular contraction must be equally uncertain. The reason why the power of the muscles is so much greater in opposing the restoration of a dislocated than of a fractured bone is, we presume, not that there is any difference in their mode of action in the two cases, but that in the latter *some of the muscles* only act upon the lower fragment, while in the former *all the muscles* are called into full contraction, as well those which immediately surround the joint, and which, though short, are exceedingly powerful in the result of their operation, as those which are inserted into the distal extremity of the bone, and even into adjoining bones, and which are remarkable for the extent of their shortening rather than for their contractile power. With regard to the author's doubt, as to the influence of muscular action in producing the projection of the upper fragment of a broken bone, we can see no reason for it; we think that the facts of anatomy, as well as of surgical practice, are against it, and in favour of the positive and decided influence, upon the upper portion of the bone, of the muscles which are inserted into it. He says, "In the case of the thigh, for example, there is no muscle so attached to the bone as to elevate the upper fragment in any other direction than that inwards, for the long muscles of the limb have lost their influence in consequence of the solution of continuity of the bone, on which they have hitherto acted; and of the muscles connected with the upper half, we have none but the triceps, which can only act by distorting the line of the bone in the direction upwards and inwards. It will be recollected that the rectus, in front, passes beyond the fracture, and the cruræus and vasti arise from the upper part of the femur; and cannot, therefore, influence its movements, while the flexors, behind the bone, extend below the fracture to form the hamstrings, and can, of course, only operate on the lower portion. In fracture high up, the psoas and iliacus exercise no influence in elevating the upper end"—p. 142. And at p. 168, "It is an error, not merely common, but almost universal, to attribute the flexion of the thigh on the pelvis to the psoas and iliacus muscles, which have really no influence whatever in raising the leg, as I have proved by experiment to my own satisfaction and to that of others. This action of the limb is effected entirely by the rectus femoris; else, whence the benefit of raising the thigh on the pelvis in fractured patella?" Undoubtedly, the rectus femoris does flex the thigh on the pelvis, but it is not the only muscle which produces this effect; and the situation of the combined psoas and iliacus, their origin and insertion, and the authority of the best observers, as Cruveilhier, Quain and Sharpey, and Theile, for example, induce us to believe that it also flexes the thigh on the pelvis, or the pelvis on the thigh, according as the fixed point is taken on the one or the other. It is fair to infer, therefore, that in the event of a fracture separating the upper part of the thigh-bone, just below the trochanter minor, from the lower, the superior fragment may be tilted upwards by the action of this double muscle; and we have seen this deformity occur, as others have seen it also. Malgaigne states that, in the preparations of the seventeen cases of fracture of the femur at its upper third, which are contained in the Musée Dupuytren, this projection forwards of the lower extremity of the superior fragment is observed in ten. (*Traité des Fractures*, p. 717.) The deviation is not, in general, great, because the muscular action is limited by some or all of the obstacles before mentioned.

But there is another displacement of the upper fragment, which is much more commonly observed than this, as a consequence of fracture at the upper third of the femur; and we are surprised that Mr. Skey has not observed it repeatedly, and called attention to it in this book. We allude to the projection laterally, or upwards and outwards, of the superior portion of the bone, produced by the combined operation of the psoas and iliacus and the anterior glutei muscles, particularly. The recognition of this deviation, and the counteraction of its effects, by proper position of the limb, is essential to the restoration of the bone to its proper form, length, and strength. A very beautiful illustration of this particular deformity is exhibited in Fig. 2, Pl. XIII. of the atlas which accompanies Malgaigne's *Treatise on Fractures.*

In view of these facts, which establish the influence of the muscles on the direction of the displacement after fracture—and this influence is exerted upon other bones as well as upon the thigh—we must entirely dissent from the opinion of the author that, "when the splints are properly applied, it is of little moment in what position the limb is placed"—p. 147. For example, in a fracture of the femur at its upper third, with the external angular deformity of which we have just spoken, it is by a proper position only that a perfect cure can be gained; pressure by means of compresses laid upon the projection, as is generally recommended, will not answer, but the lower fragment must be so placed that its axis shall correspond with that of the upper.

Mr. Skey's remarks on the mode of reducing fractures, and the apparatus employed to maintain coaptation, and those referring to compound fractures, are very good. We should prefer to have seen more importance attached to *position* in the treatment of this class of injuries, and less to the mere mechanical force exerted by compressing and extending apparatus. He gives a description and an illustration of an extending and counter-extending agent of his own device, which we should be very unwilling to employ (p. 149); for, although it is ingeniously contrived, and perhaps sufficiently powerful to accomplish the purpose for which it was constructed, its practical operation upon the living parts must, we fear, be injurious, from the great and circumscribed pressure which it will necessarily produce upon them.

The author's comments upon particular fractures need not detain us; they are based, of course, upon the general principles which he lays down for the treatment of this class of accidental lesions, and in some respects, therefore, we differ from him. But we can, nevertheless, recommend them to the study of our readers, as containing abundance of valuable suggestions, and as calculated to awaken improving reflections, even where they seem objectionable.

We pass to the *sixth chapter, "On operations for Aneurism, and for tying wounded or divided Arteries."* As in the preceding chapters, we have a preliminary discussion of generalities relating to these subjects, and subsequently the application of these principles to the treatment of particular aneurisms; the whole occupies one hundred pages of the volume, an allotment worthy of the importance and interest of these affections.

As closely appertaining to aneurism and wounds of arteries, the author briefly points out the anatomical and physiological properties of the arteries, the method which nature employs to arrest hemorrhage, the *ligature*, its mode of operation, and the manner of applying it.

It is not to be supposed, of course, that Mr. Skey has intended to give anything like a full and complete account of aneurism; such a dissertation would not be at all necessary to the perfection of his plan, and his limits would not admit of it. We presume that his aim has been to point out so much of the history and pathology of this disease or morbid condition as will enable his readers to treat it intelligently. We think that he has accomplished this object very satisfactorily, and that this preliminary sketch will materially assist the student in his efforts to cure the formidable lesions which it is intended to introduce to his contemplation. There are a few points of pathological interest, however, in which the text is not strictly accurate, and one or two others of more practical moment in which it might with advantage have been more full and explicit.

With regard to the *etiology* of aneurism, it is stated, at page 176, that "the arterial tubes are subject, among other diseases, to a morbid change in the structure of their coats, by which the vessel becomes dilated, and is no longer competent to its functions." This is, so far as we have observed, the only cause assigned. By the expression, "*a morbid change*," the author may mean, it is true, any or all of the alterations or lesions of structure to which the coats of the arteries are liable, whether they originate in abnormal modifications of nutrition, or the result of injury or violence. But we infer from the general tenor of the text that he refers to the common forms of degeneration of the arterial walls, the semi-cartilaginous, atheromatous and calcareous. We object to the author's statement because it is not altogether correct, and because it only reveals a fraction of the truth as to the causation of the aneurismal tumour. From the statistical tables which have been framed by many writers on the diseases of the arteries, it seems that there is a great want of correspondence between the occurrence of the degenerations in question and aneurism, as respects the sex and age of the patients, and the favourite seats of the two affections. Thus, according to Bizot (*Mém. de la Soc. Méd. d' Obs.*, vol. i.), *atheromatous and calcareous degenerations* are found in the different arteries, excluding those of the cavities of the body, in the following order of frequency: the posterior tibial, internal carotid, anterior tibial, perineal, subclavian, coronary, popliteal, crural, common iliac, radial, innominata, brachial, axillary, ulnar, facial, common carotid; while by the table of Mr. Crisp (*Diseases of Blood-vessels*, p. 113), *aneurism* affects the arteries in the following order: the thoracic aorta, popliteal, femoral, abdominal aorta and its branches, carotid, subclavian, innominata, axillary, external iliac, cerebral, pulmonary with the common iliac, gluteal, and posterior tibial, temporal with the ophthalmic, subscapular, and brachial. We find also that the male sex is more frequently afflicted with aneurism than the female, in the proportion of rather more than seven to one (Crisp), while the two sexes are about equally subject to the arterial degeneration. The last-named condition is found very much more commonly than the other to affect the vessels symmetrically. (Bizot.) As old age advances, the fatty and calcareous depositions become more and more constant: "Each morbid phenomenon," says Hasse (p. 82), "progressively increases in frequency and extent, with the age of the subject;" while of the 551 cases of aneurism counted by Mr. Crisp, almost three-fourths occurred before the age of fifty. Admitting, therefore, that the change of structure of the arterial coats is a predisposing cause, other agencies must be operative in the production of aneurism, as violent and laborious exercise, sudden extension of a limb which has been flexed, direct injury inflicted upon the vessel, &c.

In the sentence which we have just quoted, Mr. Skey has manifested a certain carelessness in composition, such as we have remarked in many other pages of his book, which, if the passage were literally interpreted, would convey a very incorrect idea of the causation of an aneurisural tumour. He speaks of "a morbid change in the structure of their coats (of the arteries), by which the vessel becomes dilated," as though the morbid change were the agent in the production of the dilatation. He means to teach, we have no doubt, that the change of structure induces a corresponding modification in the vital properties of the arterial walls, in consequence of which the tube loses the resiliency which enabled it to regain its original calibre after having been distended by the influx of blood from the heart, and by the constantly recurring action of this disturbing force, gradually attains the increased dimensions which it possesses. Indeed, in another paragraph, he says, "the tendency in an aneurismal tumour to increase in size is due to the actions of the heart, which operates on the diseased coats of the vessels with sufficient force to maintain an uninterrupted enlargement in the volume of the tumour." But the pathological errors contained in the continuation of the same paragraph can scarcely be so easily excused: "Against this mechanical force we have the influence of absorption, the *vis medicatrix*, or what may be termed nature's indisposition to disease. If these two powers are equally balanced, the disease would remain unaltered; but the force of the heart usually predominating, the tumour increases. If that force, however, be reduced in degree, and, without being destroyed, if it be brought within the influence of the *vis medicatrix*, the tumour will be gradually absorbed"—p. 176. It seems to us that Mr. Skey has lost sight of the fact that, in the formation of an aneurismal tumour, a process of *growth*, as well as of dilatation, takes place—of growth of the walls of the artery whereby they are rendered thicker and thus enabled to resist for a longer time than they otherwise could, the *thinning* effect which dilatation of the vessel, uncounteracted by growth, would necessarily produce. And it is in and by this very process of growth that the *vis medicatrix naturæ* manifests its preservative tendency, not by "*absorption*," for by this the walls of the aneurismal sac would be rendered more and more thin and delicate, and the occurrence of rupture and fatal hemorrhage hastened instead of retarded. The walls of the sac continue to grow, keeping pace with the increasing enlargement of its cavity, until their "*reserve power*," as Mr. Paget very happily terms the recuperative and conservative element which nature gives to every structure, and organ, and tissue, has become exhausted; then, as the cavity of the tumour enlarges, the coats of the artery become thinned, and finally give way. But, to guard against this, certain phenomena are, meanwhile, taking place within the sac. Of these Mr. Skey speaks—not very fully, indeed, but sufficiently to show that efforts are made to fill up the sac more or less completely, and thus to cure the disease.

With reference to the *spontaneous cure* of aneurisms, the author says, at page 180, "This end is effected most frequently by the sloughing of the tumour, which process may possibly be the result of increasing pressure on parts not very fully organized. The whole tumour undergoes a change of colour, loses its vitality, and eventually separates, leaving the artery *pervious* to blood"—(he certainly must have omitted, unintentionally and unknowingly, the syllable *im* before the word *pervious*). "Sometimes," he continues, "the sac is attacked by suppurative inflammation, and the entire mass is converted into a large abscess;" (he has again *forgotten*, as we hope, for his own sake, to put a plug of organized fibrin into the artery leading to this "large abscess;") "and thirdly, the contents of the sac, already partly solid, may become entirely consolidated, the entrance of any additional quantity of blood being precluded by the blocking up of the orifice, and the tumour becomes gradually absorbed."

We pass over the author's remarks on the *diagnosis* of aneurism, those concerning the application of the ligature, and the treatment subsequent to the tying of the artery. He has omitted any recommendation of preparatory treatment, a measure, we should suppose, which would materially conduce to the happy issue of the operation upon any of the larger arteries.

Mr. Skey devotes three pages to comments upon, and a description of, the mode of treating aneurism by *pressure*. He has not practiced this plan of treatment himself, but thinks that, "notwithstanding the occasional objections attendant on the application of pressure, as the agent of cure in the treatment of aneurism, a sufficient amount of success has already attended the experiments that have been tried, to warrant the hope of a useful, if not a brilliant career, for this remedy, when additional experience has divested it of its objections"—p. 192. The objections which he adduces, are the *pain* protracted through the whole period of treatment, and the difficulty, in many cases at least, of avoiding pressure upon the accompanying nerve or vein. But these objections are comparatively trifling, indeed absolutely so, if the pressure be well managed with a proper instrument. And we think that, in estimating the merits of a new plan of treatment, of one too which does away, in a great measure, with a serious operation, the statements made concerning it, and the method and instruments recommended, by those with whom the plan has been most frequently and successfully carried out, should be carefully and implicitly attended to, before any doubt or opposition is pressed. The surgeons of Dublin have the high honor of having been the first, in modern days, to resort to this bloodless procedure. For some reason or other, whether from personal, professional, or civic jealousy, or from other motive, their efforts have been opposed and decried by many other surgeons, particularly by some in Edinburgh, as may be seen in the medical journals of the latter city.

By comparing the statistical table published in the *Dublin Quarterly Journal* for August, 1846, with that given by Dr. Norris in the *Am. Journal* for October, 1849, we have a record of 43 cases of aneurism treated by *compression.* Of these, 34 were of the popliteal, and 9 of the femoral artery; 37 were cured by pressure; in three others, all femoral, the pressure was relinquished, and the cure was completed by ligature. Only one died during the treatment by compression, and that of disease of the heart, the pressure having been maintained twenty days, until all pulsation had ceased in the sac; forty-eight hours after the compressor had been withdrawn, the person died suddenly. In one case, after compression had been continued for some time, in consequence of some pulsation remaining, a galvanic current was passed through the sac; in seven days the patient was attacked with erysipelas, of which he died in six days. In another, the pressure had been instituted a fortnight, when, at the request of the patient, the artery was tied, and the aneurism cured. Descriptions of the instruments most in vogue in Dublin, and which have been found most available, may be found in the medical journals published in that city, particularly in the *Medical Press.*

The duration of the compression varied very much, from ten and a half hours in one, to one hundred and six days in another; the average time of treatment in thirty-four cases, in which the time is specified, having been rather more than thirty days.

In the number of the *American Journal* before alluded to, Dr. Norris presents a table of the statistics of mortality, after *ligature* of the femoral artery for femoral and popliteal aneurisms. "Of the 204 cases contained in the tables, 50 died. Of these, 23 died from mortification of the limb; 8 from hemorrhage; 5 from phlebitis; 3 from tetanus; 2 from hectic and diarrhœa; 1 from thoracic inflammation and abscess in the course of the artery; one from sloughing of the sac; one from the bursting of an aneurism of the aorta within the pericardium, twelve weeks after the operation; 1 from fever; 1 from absorption of pus; and in 4 the cause of death is not noted." And six of the patients who recovered underwent amputation in consequence of gangrene of the limb. Of 123 cases which were cured, and in which the ligature came away from the vessel spontaneously, after a specified time, its average stay was twenty-one days and rather more than two hours.

Here, then, the surgeon has the means of comparing the results of the two modes of treatment, and of deciding between them.

The reader will find Mr. Skey's observations on "operations on wounded arteries" to be very excellent; we would particularly ask their attention to what he says concerning the hæmostatic virtue of *fresh air* in the case of bleeding from small vessels.

We cannot attempt to criticize specially the author's account of the mode of tying particular arteries for the cure of aneurism. We are happy, however, to be able to state our impression that the operations which he advises are, in general, judicious, and that his anatomical teachings are strictly correct. There are but one or two points on which we have a few remarks to make, concerning the text.

At page 204, the author says, "Aneurism of the arteria innominata consists in a simple dilatation of the artery, involving its three coats in a greater or less degree; but it contains no coagulum, for it is a dilatation of the entire vessel;" and further on, "Aneurism of the aorta is not a dilatation of the vessel, nor a true aneurism; but a false aneurism, in which the sac communicates with the vessel by a contracted opening, through which blood enters and coagulates," &c. In these sentences, there are several very inaccurate statements into which Mr. Skey has fallen, simply from a disposition to make certain cases stand as types and standards for a class, and which he would have avoided, had he consulted the opinions and facts adduced by other investigators. Aneurism of the innominata artery, though frequently, is not always a *simple dilatation* of the vessel; it is often a true aneurism, the walls being constituted of all the coats; sometimes a true aneurismal pouch may be engrafted upon a general dilatation of the artery; sometimes the dilatation of the tube is limited to a portion of its walls. Again, it is not a constant truth, that the aneurism in question *contains no coagulum*. We refer, in confirmation of our assertions, to the "Catalogue of the Patholog. Specimens contained in the Museum of the Royal College of Surgeons," recently published, vol. iii. pp. 258–260.

With regard to his opinions concerning aneurism of the aorta, they are equally with the others erroneous. Dr. Hope says, in his admirable treatise on the Diseases of the Heart, &c. (Am. ed. p. 396), after detailing the facts which demonstrate the existence of *true*, in contradistinction to *false*, aneurism of the aorta, "These proofs have of late years been so frequently verified by dissection, that the reality of aneurism by dilatation of all the coats of the artery is no longer problematical. Almost all the aneurisms of the ascending portion and the arch are originally of the true species, but the false is sometimes engrafted upon them;" and he refers to a case corroborative of these statements. In the catalogue just quoted, descriptions of aneurismal dilatations and of true aneurisms of all portions of the aorta, from its origin within the pericardium to the end of its arch, may be found (pp. 241–256).

The author explains the diagnosis, the history of the operation for tying the innominata, and the mode of performing the operation, with sufficient clearness. In every one of the four or five cases in which this operation has been done, death has followed on from the 26th to the 67th day. The procedure devised and first practiced by Mr. Wardrop has, on the contrary, been more successful in its results. It is a modification of Brasdor's operation, and consists in applying the ligature around one of the branches of the innominata, either the subclavian or the carotid, as may seem most expedient. Mr. Wardrop says (*Cyclop. Pract. Surgery*, vol. i. p. 237), "It is a fact demonstrated by dissection, and worthy of remark in contemplating this mode of operating, that when a spontaneous cure of aneurism of the aorta has been going on, Nature has usually plugged up the carotid, so that in performing an operation for the cure of such an aneurism it would be advisable to imitate her in this respect, and to place the ligature on the carotid instead of the subclavian;" but if either of the two vessels were entirely or partially obstructed, the ligature should be applied around the other. Mr. Hancock, writing in 1839 in the *Cyclop. Anatomy and Physiology* (art. "Innominata"), concerning this operation, uses the following language: "Out of the seven cases in which it has hitherto been employed, and which I have here cited, three were successful, and of the other four one lived for a period of twenty months, and another for about two years after the operation." And yet, in the face of these *facts*, we find Mr. Miller, in his *Principles of Surgery*, p. 578, saying of it, "In my humble apprehension, under all circumstances inexpedient; because containing within itself the elements of *certain failure.*" We are sorry to observe that the only mention which Mr. Skey makes of this method is, "in aneurism of the innominata, the operation of Brasdor has been successfully revived by Mr. Wardrop"—p. 210. We may mention, as supporting the propriety of this operation, and in confirmation of the statement of Mr. Wardrop, that in the "Catalogue of the Royal College of Surgeons," to which we have already referred (pp. 258–260), there are descriptions of five preparations of aneurism of the innominata; in two of these the right subclavian and carotid arteries are healthy; in one they are a little dilated; in a fourth, "between the first rib and the clavicle, *the subclavian artery is obliterated*, probably by the pressure of the aneurism;" and in the fifth "*the right carotid artery* adheres to the front of the sac, and is *flattened* by it; *the right subclavian* adheres to its lower part, and is *obliterated* by its pressure."

We had intended to quote in full the author's description of the operation for securing the *subclavian artery*, inasmuch as it differs in its line of incision from those usually practiced, and as the history of the case in which it was performed has never before been published. But we must content ourselves with simply referring to it, pp. 211–218. We pass over, also, what remains of this chapter, and several of those which succeed it, in which he treats of venesection, arteriotomy, and varicose veins, to that in which the subject of *amputation* is discussed.

To this class of operations Mr. Skey devotes seventy pages, considering first the circumstances which justify or require such a serious operation, the different modes of performing it, with their respective merits, and some other points pertaining to it; and, secondly, special amputations.

Like the other chapters, this one contains a great deal of very valuable advice. Mr. Skey is averse to amputating, whenever it can be avoided, and very properly contrasts the present improved state of surgery, as respects this operation, with its condition some years ago, limbs being preserved for years of usefulness now, which then were sacrificed as a matter of course. He truly says, "that the aim of surgery is to preserve, and not to destroy; and that more real superiority is exhibited in the successful application of skill that retains a limb, than in the dexterity, however great, with which it is severed from the rest of the body." And, in accordance with this principle, he endeavours honestly to lay down the proper grounds upon which alone an amputation may be done, and the best method of doing it. The chapter possesses numerous and decided merits, and the few faults which a critical eye may detect in it are generally rather of omission than of commission, resulting sometimes from haste or carelessness in composition. As an example of this, we may refer to his description of the mode of performing the circular operation, p. 303, which is not clearly expressed. Mr. Skey enumerates as among the circumstances which justify or may require amputation, "extreme cases of irreducible dislocation;" but before this step is resorted to, he says that all other means must be tried for the purpose of relieving the difficulty, such as dividing the obstructing tendons, ligaments, &c. "If this principle be fully carried out, if the surgeon resolve to sacrifice the joint, or rather to *risk* the destruction of the joint as a movable articulation, amputation will be rarely resorted to in cases of irreducible dislocation"—p. 302. And on the same page he says, "With regard to operations for distortion, &c., or operations of expediency, as they are somewhat inappropriately called, I have only to remind the reader that they are so often followed by serious and even dangerous results, as are, indeed, all large operations performed during a condition of the nervous system unprepared for the shock, that they should rarely, if ever, be recommended, and not always resorted to on importunity." Here, it seems to us, Mr. Skey stoops too much from the firm and dignified stand which he before assumed with respect to operations not demanded by necessity. We do not think that a surgeon has any right, nay, we think that he would do wrong, to perform so serious an operation as this from any amount of *importunity* on the part of the patient, unless he were firmly convinced in his own honest heart of its propriety. We can scarcely conceive that any case of simple unreduced dislocation will justify an amputation; neither are we disposed to admit the propriety of this operation in the case of distortion or deformity, unless a state of actual disease shall have resulted from them. And always before removing a limb or a portion of a limb, the surgeon should satisfy himself that the dangers to life and health, with and from amputation, would be less than they would be without it. The patient cannot appreciate or estimate the dangers attending amputation, even of a small member, so well as the surgeon, and, therefore, the full responsibility of the performance of an operation cannot be transferred from the latter to the former; neither can the surgeon be forced to perform an operation of which he disapproves.

Mr. Skey has contrived a tourniquet which, we should think, will be found a very useful one in amputations, and whenever else it is necessary to arrest the circulation through the main artery of a limb without producing constriction around its entire circumference. The description and representation of this instrument will be found in another department of this Journal.

Chapter tenth is taken up with the operations of *excision* and *resection*, concerning which, the author's remarks are very judicious. Next follow in order chapters devoted to operations practiced on *tumours;* on *bursæ* and *ganglions;* those performed on the *head*, *face*, and *neck*, including the process of elevating depressed cranial bone, the rhinoplastic operations, those for polypus of the nose, hare-lip, ranula, enlarged tonsils, staphyloraphy, bronchocele, tracheotomy, and laryngotomy. These are well described and judiciously chosen.

The operations *on the chest and abdomen* constitute the next portions of the volume. Among these we find *paracentesis* and those for the different varieties of *hernia*.

The author's remarks concerning the last-named affection are thus commenced: "The operating theatre of a hospital is the only school for the acquisition of a complete and practical knowledge of hernia. Indispensable as may be the cultivation of anatomy to entitle a surgeon to rank in the operative department of our art; we find, perhaps, no branch of the subject in which the acquirement of the dissecting-room leaves the real necessities of the practical surgeon so unsatisfied as that of hernia, or in which the recollections or associations of that theatre of study can so little be brought to bear upon the almost infinite varieties of form and structure that present themselves to the operator throughout a long career of hospital practice." Every one will admit the truth of these observations. But Mr. Skey has no intention, as he proceeds to say, to undervalue the importance to the operator of a dissecting-room education.

The subject of this chapter is very well handled; the author's views of the pathology and of the practice being very judicious. In treating of hernia, he examines its nature and the causes which produce it; the anatomical relations of the protrusion, the obstacles to its restoration, and the mode of overcoming these. He very properly asserts that "a hernia is always the cause of its own strangulation, unless the aperture through which it escapes from the abdomen consists of muscular fibres so arranged as to be able to contract around it." And this fact has an important bearing upon the treatment of strangulated hernia, and shows the folly of long postponing the resort to the knife, in favour of the continued employment of the hot-bath, tobacco cataplasms and enemata, bleeding, and the like remedies, as though the constriction at the neck of the sac depended upon muscular spasm.

In detailing the symptoms of strangulated hernia, the author points out some of the sources of doubt and error in forming a correct diagnosis. In all such cases, he recommends the operation, if other means fail, provided that, with the other symptoms of this affection, there be positive swelling, however small and difficult of detection it may be. "It would be better to cut down unnecessarily on ten tumours bearing the evidence of hernia, than to omit to bring one true hernial tumour to the test of the knife. For, it must be recollected, the operation suggested is not the operation for strangulated hernia, but merely an exploration preparatory, if necessary, to the operation itself. Such a case occurred to me, during the course of last summer, in St. Bartholomew's Hospital. A man was brought in, having symptoms of strangulation, with a tumour in the groin. My colleagues and myself were unanimous in our opinion of the existence of hernia. In the absence of Mr. Lawrence, who had, however, seen the case, and recommended the operation, the duty devolved on me. I exposed the tumour, which proved to be an absorbed (absorbent?) gland. This man had local pain, sickness, and constipation."

With reference to the delaying of the operation, he says: "I believe it may be asserted, without fear of contradiction, that the danger attendant on the operation for strangulated hernia is nearly in proportion to the period of the strangulation. Within the last quarter of a century, the treatment of that disease has undergone a considerable improvement, founded on an advanced pathology. Within my own recollection, many hours, even a day or more, were allowed to elapse, for the purpose of bringing into action many worthless remedies that were inoperative to any purpose but that of reducing the small chance of the patient's recovery, by wasting the precious hours during which the operation might have been undertaken with a prospect of success. The profession had a routine of remedies which were resorted to in a given order of succession; and, until they were exhausted, it was not deemed right to have recourse to the only remedy that could be available to a successful result. The taxis, warm-bath, taxis repeated, cold effusion, the local application of ice, taxis repeated, the tobacco enema, and, finally, more taxis, and then the operation." This is all very true; and we have no doubt that many lives have been let slip by the too prolonged and repeated application of manual efforts by the surgeon and his friends in consultation. We commend, therefore, this determination of Mr. Skey: "I have myself adopted a rule for many years, not to attempt reduction by any persistent effort, after having ascertained that a previous attempt has been judiciously made by a *competent* man." The author ranks the application of *cold* to the tumour as next in efficacy to the taxis.

We need not comment upon his description of the performance of the operation in general. We think, however, that he makes an unnecessarily liberal allowance in stating that the division of about *a quarter of an inch* will generally suffice for the return of the protrusion; we are inclined to think that a much more restricted incision will *generally* relieve the stricture.

The quotations which we have made will, we hope, favourably impress our readers, as we have been impressed, with Mr. Skey's book, so far as it refers to hernia. In his observations on special herniæ, the general principles on which we have thus far remarked are carried out.

We have next presented to our notice certain operations practiced on the external organs of generation in the male, on the male perineum, and about the anus. Of these we shall only notice those of *lithotomy* and *lithotrity*, with which the 18*th Chapter* is taken up.

Mr. Skey's remarks concerning these procedures for relieving the bladder of the stone are conceived in a spirit of great candour and good judgment. Of the two, he prefers the crushing operation whenever it can be resorted to, considering this the rule, the other the exception; and his object is to lay down certain conditions which are favourable to, or demand, the one rather than the other. He says, "If we were to select a case for the exhibition of the operation of lithotrity—and I take lithotrity as the rule, and the cutting operation as the exception, considering the simpler and safer course that demanding the first consideration, and before the tribunal of which the case is to be first brought to trial—if we had the power of selecting a case especially suitable in all its bearings, we should require the following conditions: First, well-developed manhood; second, a healthy and readily dilatable urethra; third, a bladder free from irritation, and capable of retaining at least six ounces of urine, a condition which infers the absence of prostatic disease; fourth, a tonic condition of the nervous system; and, fifth, the presence of a stone of such dimensions as to be readily embraced by the screw of the lithotrite." These conditions become the subjects of further discussion and modifications, and directions are given for the preparation of the patient for the operation, which is all important, for upon judicious preparatory treatment we believe the success of the operation very much depends.

Mr. Skey is by no means singular in interdicting lithotrity *in children;* but we think there is no real ground for the objection. His reasons are, the small size of the urethra and bladder in the child, and the danger that an instrument small enough to enter the bladder would not possess sufficient strength to permit of the crushing of the stone, but would rather break itself; he has no doubt, however, "but that the operation of lithotrity may be rendered available to boys as early as thirteen years of age, by a reduction in the size of the adult lithotrite, and by careful dilatation of the urethra." But it must be remembered that the urethra of children is very dilatable, and that the calculi which are formed in the bladder at this age are generally smaller, and not more hard, than those which occur in the adult. And what theory will justify in this case, practice confirms, for the operation has been done often enough in children, even of very tender years, to establish its propriety. We have met with the following cases, after but a very brief search in a few of the journals: M. Segalas operated upon a child only thirty-three months old, and in six sittings, in as many weeks, crushed an oxalate of lime calculus eleven lines in diameter; the child, during this time, was permitted to sport as usual, and his recovery was complete. (*Am. Journ.*, vol. xx. p. 234, and *Brit. and For. Med. Rev.*, vol. v. p. 250.) M. Guersent, Jr., cured five cases of eight in children, only one of the deaths being due to the operation; he cut thirty-seven children for stone, of whom seven died, four of them, however, not from the operation, but from intercurrent diseases. (*London Lancet*, vol. i. 1848, p. 184.) A reviewer in the *Brit. and For. Med.-Chir. Rev.* (vol. i. p. 120) says that he has "operated successfully upon two boys between two and three years of age; one between three and four; one but little more than four; one about seven, and a girl nine years old. In one of the two youngest the calculus was mulberry, and about the size of a bean; it was crushed in one sitting, and not a bad symptom followed. In the other, the calculus was phosphatic upon a base of lithic acid; it was about the size of an almond (with the shell), and ten sittings were required, but the cure was complete on the 30th day. In the case of the boy in his fourth year, the calculus was mulberry and scarcely so large as the last; three sittings were required on alternate days, and after the third, the cure was complete. In the next in point of age, the calculus was also mulberry, and about the same size; four sittings at different periods within twenty days completed the cure. In the boy aged nine, a calculus of lithate of ammonia, larger than a bean, was crushed in two sittings on alternate days. In the girl, a lithic acid and lithate of ammonia calculus, of the size of a large walnut, was complicated by a deranged state of the general health, hectic, and catarrh of the bladder, the symptoms of stone having been observed upwards of four years; yet in twenty-four days, after six sittings, the bladder was completely liberated; the only accident was the detention of two large fragments at the meatus, after the first sitting, and the child has since continued in good health." Dr. Nathan R. Smith, of Baltimore, "has performed lithotripsy, with Jacobson's and Heurteloup's instruments, on infants two years of age, in no less than four instances, and on several other very young subjects. In one respect he has found the operation more certain than on adults; the bladder expels the fragments more promptly." (*Trans. of the Am. Med. Assoc.*, vol. ii. p. 227.) Thus, it would seem that Mr. Skey is not at all borne out by facts in his condemnation of this operation on children. The real objection stated by those who have performed it on such patients is that the neck of the bladder dilating quite freely, and the stream of urine flowing through it strongly, fragments may enter and remain in the urethra, requiring, perhaps, another operation for their removal from this new situation; but in only one of the cases which we have quoted was this difficulty met with. Mr. Skey makes no allusion to the applicability of lithotrity to *females*, and perhaps from the emphasis which he lays on "*well-developed manhood*," as one of the pre-requisite conditions for its performance, he may intend to confine it to the male sex. But the tables of M. Civiale rather go to show that its results in the female are even more favourable than in the male, in consequence of the anatomical and physiological peculiarities of the urethra in the former. And it is certain, that if any operation other than that of simple dilatation of the urethra and neck of the bladder be requisite to relieve the bladder of a woman of stone, lithotrity possesses a great advantage in being free from the liability of leaving behind it such an annoying and mortifying infirmity as a *vesico-vaginal fistula*, which, we believe, is rather apt to remain after lithotomy in the female. Mr. Skey does not inform us whether he is an advocate for the use of chloroform in these operations, or not. This is a question of some importance, now that the administration of this "sweet oblivious antidote" has become so general.

We see no reason why it should not be given in *lithotomy* as freely as in any other operation; but we think there is a decided impropriety in employing it in *lithotrity*. There is no operation which demands gentleness and delicacy of manipulation more than this. The only evidence which the operator can have, that he is doing injury to his patient, is the exhibition of suffering on the part of the latter; but this warning signal is rendered inoperative by the anæsthesia of the patient. In order to secure, so far as can be done, successful result after this operation, the physical and mental condition of the individual should be as healthy as possible, and the instincts which apprise him and the operator of the infliction of injury should not be silenced or unheeded.

For the cutting operation, Mr. Skey advises the use of a staff having a curve longer and more considerable than that which is in common use, and of a *scalpel* instead of the gorget. He differs from other surgeons of high and deserved repute, whose advice should not be hastily departed from, in inculcating that there is no danger in cutting through the bulb of the corpus spongiosum. The lateral operation is the only one which he describes.

Several lengthy chapters are taken up with the consideration of *lateral curvature; club-foot, and other deformities; puncture of the intestines in constipation, and for imperforate anus in infants; removal of cicatrices, and autoplastic operations; extraction of foreign bodies from the tissues; acupuncture.* And the author also devotes considerable space to the discussion of the *Cæsarean operation*, and *ovariotomy*, procedures which are now exciting much interest at home and abroad. The question of the greatest importance at present, concerning the latter, refers to the *diagnosis* of the morbid condition, and on this Mr. Skey sheds no light. He advocates the operation strongly—more strongly, it seems to us, than is advisable, considering the errors in diagnosis which are constantly being made, from the impossibility of being surely right, and in view also of the tendency, which he acknowledges to exist, to the performance of bold operations which are often not justifiable. If all who have practiced this procedure would publish fully the results of unsuccessful as well as of fortunate cases, and would make known their errors of diagnosis and the sources of them, as we believe has been done by the most distinguished of its performers in this city, the profession would soon be in a position to judge more fairly of its propriety and its merits. Until then it need not surprise us that the vast majority of judicious men look upon it with doubt and distrust.

The remaining sixty pages of the volume are devoted to operations on the eye. With these Mr. Skey acknowledges in the preface that he is less personally familiar than with the foregoing; and he has therefore "not hesitated to make an extended reference to the works and opinions of others" concerning them. Among other distinguished ophthalmologists whom he quotes, we see the names of Scarpa, Mackenzie, Lawrence, Dalrymple, Weller, Jörg, &c.

In conclusion, Mr. Skey has appended an "index to instruments and apparatus required for special operations," which, we have no doubt, will be of assistance to young operators.

The wood-cuts illustrating the text of this volume are very numerous and descriptive. The style in which the author clothes his thoughts is deficient in elegance, often it is even very faulty, and sometimes exceedingly obscure; like the utterings of Delphos or Dodona, it is frequently susceptible of more than one interpretation.

No one, at the present day, when so many zealous labourers are in the field, if he rely solely or chiefly upon his own abilities and acquirements, however great these may be, can make a book on any subject connected with medicine, which shall be as complete as it might have been had its author sought for and availed himself of the harvest of his fellow-reapers. And, therefore, this volume of Mr. Skey's cannot be considered so much an exposition of the present state and requirements of operative surgery, as of the opinions and practice of a surgeon who thinks for himself, and who has had abundant opportunity of gaining practical skill and knowledge. Amongst other merits this must be looked upon as an important one—that its advice is decided upon everything, and its recommendations are explicit; its reader is not left in doubt as to what the author would counsel him to do. F. W. S.

Art. XIII.—*Le Climat de l'Italie, sous le rapport Hygiènique et Médicale.* Par le Docteur Ed. Carriere. Paris, 1849: pp. 582.

The Climate of Italy in its Hygienic and Medical Relations. By Dr. Ed. Carriere.

Impressed with the favourable position Italy occupies on the globe—its geographical situation, its mild and soft climate, and the vast extent of its accessible coast—Vitruvius, centuries ago, remarked that this favoured land had been so placed, in order that it might conquer southerners through the effect of physical force, and subject northern nations through the influence of the intellect. In an historical point of view, as our author observes, the remark is correct, for it expresses the double influence which the Roman world exercised on contemporaneous nations. But it does more, extended as it may be to mean, that the race by which that country was peopled was, like its climate, of a mixed character, and that, while the ancient masters of Italy were endowed with the power which conquers, and the thought which civilizes, the climate and the soil of their country combined the tonic effects of the north with the enervating influences of the south. The opinion of Vitruvius was that of all antiquity.

> "The happy soil of Italy, which had to fear neither the extreme cold of Germany, nor the scorching rays of the Egyptian sun, was, of all others, the soil of predilection. None other, either on the Grecian coast or in western regions, was preferable. Such advantages, which, doubtless, were exaggerated at the time that Rome was at the pinnacle of splendour, attracted the barbarians to the soil of the peninsula. All the luxuries—all the monuments—all the power of the metropolis and of Italy disappeared before them; but the climate remained. It has become in our days a subject of investigation, and medicine has been enabled to class it among the active means employed to combat disease."

The science of climatology is far from being one of recent creation. It ascends to a remote period in the history of medicine, and, like most other branches of professional inquiry, originated in Greece. But, though at that early period some of the many effects of climate had been noted, the therapeutic and hygienic deductions to which they led were overlooked. Nor does it appear that by the Romans much progress was made in the science; for, though Ideler[*] has, with true Germanic industry, pointed in ancient records to indications, more or less satisfactory, of investigations relative to the therapeutic properties of climates, the results obtained are scarcely of sufficient value to deserve the attention of medical inquirers. It is true that the Romans did not fail to note the peculiarities of the Italian climate. So far from it, physicians, poets, historians, in works we still read with pleasure and advantage—Pliny, Cato, Varro, Cicero, Palladius, and Columella—have, while treating of the cultivation and natural history of the soil, entered into useful details relative to the general conditions of the atmosphere, and the varied characters of the seasons. But beyond these meteorological questions they did not proceed, unless, indeed, to sing the praises of their country; and the medical inquirer finds in their writings nothing which can be applied to useful professional purposes.

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[*] Meteorologia Veterum Græcorum atque Romanorum, 1832.

It does not appear, indeed, that anything of interest or value was effected on the subject prior to the return of the crusaders from the Holy Land, when the professional services of the pupils of the schools of Monte Casino, but especially of Salernum, were extended to the wounded and sick, who, many of them individuals of rank and note, remained a greater or less time in the country, or even took up their abode permanently there; and, appreciating the advantages and delights of the climate, probably led the way to the correct investigation of its hygienic and therapeutical influences. This at least we may infer from the fact that the only work which the Italian school of that period produced, or rather which has come down to us, the poetic treatise on Hygiene of Salernum, Regimen Medicinæ Salernitanæ—in which the action on the human body of external agencies is clearly pointed out—we find nothing relative to the therapeutical influences of the climate of that place, or of the peninsula generally. The revolutions, civil wars, and foreign invasions, of which Italy was long the victim, greatly retarded the progress of professional investigations on this and other subjects. But at the period of the revival of sciences, the study of epidemics, which had, long before, exercised the minds of Grecian physicians, elicited the attention of the Italians. Our author remarks, indeed, that the subject could scarcely fail to attract particular attention in Italy, inasmuch as the peninsula had been, even during the time of the Romans, a prey to those terrible scourges which extend their ravages over entire populations; and as, since it had become covered over with ruins, those disasters had returned at short intervals, and appeared to derive an increased energy from the insalubrious conditions of some portions of the soil. Physicians applied themselves in consequence to the analysis of the effects, as well as to the study of the causes, of those diseases; and their investigations, which were the results of necessity, led to more precise notions than were before possessed relative to the condition of the soil, the quality of the air, the influence of the winds, and the relation existing between these agencies, and the physiological and pathological effects they produce on the human body. Many of the works written or published on this useful and interesting topic have, doubtless, been lost; for we possess none anterior to the two memoirs of Lancisi on the Roman climate, and which appeared, or were written, about the close of the seventeenth, or beginning of the eighteenth century. Those that have followed usually refer to particular towns or circumscribed territories, and even of such, very few deserve serious attention, being, for the most part, written with a view to extol, in the most eulogistic style, the beauties, excellencies, and curative effects of particular places, and to prove their superiority over every other spot in creation. Dr. C. properly excludes from this censure a few works of decided merit, which have appeared in our own days, and are written with what he denominates scientific sincerity. Among these may be mentioned the works of De Renzi and Roubaudi; to the former of whom we are indebted for an excellent monograph on the medical topography and statistics of Naples, and to the latter for a very good essay on Nice and its environs. Of the productions of those who treat of the climate of the whole peninsula, Dr. C. does not speak favourably. Dr. Clark (Sir James), he says, has contented himself with combining figures, more or less accurate, with monographs, which are almost invariably unsatisfactory. Dr. Barzelotti, of Pisa, has, at least, produced something original, by drawing up a chart divided into categories of climate, in which each of them is represented by a particular colour. But the work is merely ingenious. As to the text, the poetic element figures in it conspicuously, and besides, it consists of little more than a kind of guide book, useful to every one but invalids. To those who are acquainted with these two works, we scarcely need remark that, though defective in some respects, they, especially the first, are entitled to greater regard than our author seems willing to accord to them. But, while entertaining this opinion, we are free to admit that he has not been too severe on the work of his countryman Thouvenelle, which appeared at the close of the last century. It is now before us, and, after examining its contents attentively, with the view to the preparation of this article, and in order to compare the results of the observations therein embodied with those to which Dr. C. has arrived, we have, like the latter, found it to contain nothing we searched for—the author entering into no useful details, and offering few practical applications. He places the scene of his investigations far above the surface of the earth, and in the regions of the clouds, where every agency devolves on the gaseous fluids, and on the electricity floating in the atmosphere.

Dr. C. first treats of the climate of the Italian peninsula generally, and in a separate division of his work passes in review the climate of separate places. For the latter purpose he divides the whole country into three regions—the southern, the middle, and the northern. The first of these regions comprehends the country south of a line drawn from the eastern shore of the Gulf of Gaëta, on the Mediterranean, to the Adriatic Sea, by the valley and mouth of the river Pescara. It includes all the Neapolitan provinces, (Salernum, Capri, Massa, Torrente, Castellâmare, Torre del Greco, Resina, Portici, Naples, Puozzoli, Baia, Ischia, Gaëta,) with the exception of the ulterior Abbruzzi. The middle region is comprised between the ulterior Abbruzzi and the Bolognese territory on the Adriatic, and between the Gulf of Gaëta and the territory of Lucca on the Tyrrhenean Sea. It is composed of the Roman States and Etruria, Rome, Sienna, Florence, Pisa, and the Roman and Tuscan Maremme. The northern region is that which forms part of the continent, and from which the Peninsula starts. It comprises, among other places of interest, Venice, Milan and its lakes, Genoa, Menton, Villefranche, Nice, and Hyeres.

In investigating the climate of the country in its *ensemble*, as well as the climate of separate localities and cities, our author has adopted the division proposed by Hippocrates; convinced as he is, and as every writer has been, who since the days of the Coan sage has turned his attention to the subject, that, whatever may have been the progress of the science during that long period, the investigator finds it necessary to resort to that inevitable trilogia, air, waters, and situations. But, while we admit this necessity, we cannot shut our eyes to the fact that it has lost a portion of its original simplicity. Each of its elements forms, at present, a fasciculus or combination of numerous facts or circumstances, which require a degree of development proportionate to their relative importance. Thus *situations* comprehend the form of the territory, its exposition, its geological composition, the chemical transformations it may present, the general characters of the vegetation—those indices of the quality of the soil, and of the influence of the sky. The waters, which must be studied not only in reference to their nature, but also to their distribution around continents, and on the surface of the soil itself, must be examined, likewise, under that meteoric form which condenses, after having reduced them to the state of vapour, and plays so active a part in the conditions of the climate, and the diurnal changes it undergoes. The air comprehends the entire history of the movements of the atmosphere and of the reactions which it undergoes through the instrumentality of electricity, caloric, gaseous substances, and of those undetected agencies which float in the midst of this luminous ocean. By adding to these several orders of causes, man, or the race they modify, or that exhibits more or less deep imprints of their power, but at the same time modifies them to a greater or less extent, the principal conditions of the problem will be grouped in the mutuality and combination of their relations.

Italy has been compared, so far as regards the configuration of its territory, to a boot, the toe of which pushes Sicily out at sea. The comparison is not inappropriate; but Dr. C. very justly prefers the one suggested by Pliny, who remarked that that country resembles a long and narrow oak leaf, the indented edges of which give a good idea of the long series of bays, gulfs, and promontories by which the coast throughout its whole extent is studded; while the rib which divides the leaf longitudinally represents the important Apennine chain which divides, in a corresponding direction, the maritime region of the country. The Apennine in this way separates the peninsula into two opposite zones; the one facing the Adriatic, the other the Mediterranean. In its course it sometimes approaches to, at other times it recedes from the coast, and sends off several lateral prolongations, as the Campanian chain, or the mountains of Gaeta; and on reaching the southern extremity of the kingdom of Naples, bifurcates and proceeds east and west. But in a northern direction the Apennine does not ascend as far as the farthest limits of Italy—belonging only to the maritime or peninsular portion of the country; whilst the Alps constitute, in some measure, the basis of the continental portion. These important mountains constitute the northern barrier of the Milanese, and between them and the Apennine chain (which proceeds from the margin of the Gulf of Genoa to the centre of Italy, whence it takes a southern direction), are situated, not only the latter territory, but a large portion of the Papal domains. This well-watered, populous, and fertile region is enclosed on all sides, except the eastern, or that facing the Adriatic. The northern portion of Tuscany constitutes the limits of continental and the commencement of maritime Italy.

The western and eastern zones or regions, formed in the way mentioned by the Apennine chain, and extending on both sides from the mountain to the sea, differ from each other in a very important point—namely, as regards their level. The first or western zone consists, in many places, of a low plain on which the water flows with difficulty, and which favours the overflow of the sea or of the running streams. The eastern region, on the contrary, assumes the character of an amphitheatre, and the coast, instead of being flat and level, is high above the surface of the sea. It is scarcely necessary to remark that this difference in the topography of the country is one of great importance in a hygienic point of view, occasioning, as it must naturally do, a very great contrast in the salubrity of the several localities. Marshy overflows are formed on the low flat and level portions of the soil; and from these, under the influence of high atmospheric heat and other agencies, arise those miasmatic exhalations which produce remittent and intermittent fevers. The western region of maritime Italy presents many such marshy districts; while the eastern, as also the coast of the Ionian Sea, though not free from them, is much less characterized by them than the former.

Dr. C. very justly remarks that, if the depressions of the Italian coast occasion inconveniences, its multiplied irregularities and deep indentations give rise to important advantages. Maritime climates enjoy more agreeable influences than those of continental regions. These agreeable influences, which are connected with the hygrometrical condition of the atmosphere and the uniform temperature of the sea, are in ratio to the sinuosities of the coast, or in other words to their absolute development. In proportion as the coast exhibits that character, do the extremes of temperature approximate to each other—the less cold there is in winter, the less heat there is in summer.

> "Europe," he says, "is, of all countries in the world, the most favoured in this respect; and in Europe there are two regions, which on that point may be placed above all others. The one, England, with its depending islands; the other Italy, from Tuscany to Calabria. The former is indebted to those conditions for an hibernal mean, which, even at the 62d degree of latitude—that of the Feroe Islands—has never descended lower than zero (Cent.); while the other owes, in a great measure at least, to the same influences, the high degree of its mean winter temperature."

Important as doubtless are the circumstances already mentioned towards constituting a favourable climate, others are scarcely less so. With a suitable latitude, a proper exposition, a right direction of mountain ranges, combined with proximity of the sea, we may have a mild climate; but the latter will not necessarily prove healthy. Nor does the salubrity of a country depend exclusively on the elevation of the soil above the surface of the water surrounding the territory, or flowing on its surface. Much is due to the nature of the mineral strata constituting the soil. So far as regards Italy, this question, whether considered in a geological or a chemical point of view, is deserving of special attention; for we have already seen that on the surface of her soil there exist numerous sources of miasmatic exhalations, which spread their baneful influences far and wide. Impressed with the importance of the subject, Dr. C. enters into many details which our limits compel us to omit. It will be sufficient to remark that, on the higher points of the Alps and Apennine, we find the granite. On the slopes, and sometimes far into the interior of the land, calcareous rocks of secondary formation predominate. They are very compact; are characterized by a fine and close grain; and resist, during a long series of years, the action of decomposing agencies. They are found as far as the limit formed by the line of Bergamo, Brescia, and Verona in northern Milanese; as also in localities of great salubrity, such as the Gulf of Gaëta, the coast of Amalfi, and from Policastro to the borders of the Ionian Sea. The plain of the Milanese rests upon a thick chalky stratum, which extends along the western and eastern edges of the Apennine, as far south as the frontiers of the Neapolitan States. It is covered over with a more or less powerful diluvium, and with deposits of comparatively recent date, the materials of which furnish aliment to the magnificent vegetation of this portion of the Italian soil. From Turin to the farthest confines of the Calabrias, the hills and various accidents of the territory skirting on each side the great peninsular chain, present a soil of marine and paludal origin, which has received the name of sub-Apennine. Its aggregates have but little solidity, are very porous, and possess great affinity for water, with which it is easily and frequently saturated; a condition which, when not carried beyond certain limits, is favourable to vegetation; but, when aided by high atmospheric heat, may prove detrimental to health. To these various species of soil must be added others which may be denominated accidental, and exercise a great influence on the character of the climate—*i. e.* the volcanic. In Italy, they are extensively distributed, and found not only in the territory of Naples, and one of the islands of the Gulf, where, to say nothing of Vesuvius, they retain a certain degree of activity, but also in the Campagna di Roma, and even about the city of Rome itself.

In the Papal States, this volcanic soil extends from Aquapendente to Nettuno, situated on the maritime and northern edge of the Pontine Marshes. After Terracina, at the southern limits of those marshes, as also on the secondary mountains of Gaëta, the volcanic soil reappears constituting the Phlegrean fields. The volcanic products of the Roman States consist, in great measure, of tufas and porous substances easy of decomposition. Those of the Phlegrean fields are more various in their structure—consisting of the different varieties of lavas, some of which undergo decomposition in a comparatively short space of time; of tufas and scoriæ which soon lose their physical characters; sulphurous products of various kinds, &c.

> "What," as Dr. C. asks, "are the effects of those sulphurous emanations on the healthy conditions of the air? Do they render this fluid more exciting, more electrical, or less salubrious? These are questions of too much importance not to be taken up at a future period. At present, it is sufficient to state that the structure of volcanic soils favours more readily the process of decomposition than that of less compact soils which have been formed during the course of the regular periods of geological ages."—p. 19.

Dr. C., in continuation of this subject, next notices the changes that have taken place in the dimensions of certain portions of the Italian coast, by the receding of the sea and the consequent extension of the land. Of this phenomenon, that part of the Roman coast where are situated the mouth of the Tiber and the city of Ostia, affords a fit illustration. For here, the coast has received and continues to receive such extensive additions, that there exists now a maritime margin or surface of about four miles in extent between its former and present limits.

> "This partial revolution has not resulted merely in pushing back far inland the old city, formerly the seaport of Rome, and in separating from the sea the ancient mouth of the Tiber. It has placed the city in the centre of an insalubrious territory of which it formerly occupied only the edge, and has been the cause of its progressive depopulation. We know that formerly Ostia was too small for the number of its inhabitants, and figured among the magnificent cities of Latium. At present, it contains only a priest, a tavern-keeper, four or five soldiers, and a few families, which do not venture even to reside in it all the year round. But this insalubrity is not limited to the city, for inasmuch as the miasmatic elaboration is conducted on a large scale, in consequence of the increased extent of the surface, there has arisen, since the time of the Romans, a new source of morbific effluvia, which must be taken into account when we inquire into the sanitary conditions of the country, though more especially when the wind blows from the sea. Lancisi has traced the comparative limits of this progressive extension of the coast, which in his time was already considerable, and we may, from that, form an idea of the enlargement of the Roman desert. The revolution which has displaced the coast of Ostia has operated, though less powerfully, on other points of the peninsula, and principally on the coast of the Mediterranean. They constitute so many additional sources of insalubrity, which circumstances, depending on human industry, have unfortunately only tended to increase, or at least to perpetuate. These elements must be united to those furnished by the inland regions of the territory, and, like them, be

taken into account in the analysis of the partial influences, as well as of the general characters, of the climate."

We cannot here follow our author into the developments he indulges, in relation to the extent and mode of cultivation, as well as to the products of the soil, of the several regions of the Italian peninsula, the changes they have undergone since the Roman period, and other subjects of kindred nature. All we can do is to call attention, very summarily, to one on which he dwells in detail—the almost entire removal, destruction, or degradation of the forest trees of many parts of the country. That in some respect the result has proved injurious, there can be but little doubt; but in many others, it must have been salutary, by removing sources of terrestrial and atmospheric humidity, and modifying and equalizing the temperature. Thus it is found, that snow no longer dwells long on the cold summits of the Soracte, as was the case in the days of Horace. The Tiber is no longer covered with ice, as described by Juvenal; and Pliny could not now complain of the rigorous cold, which destroyed the myrtles in his gardens at Laurentinum.

Of all the countries of Europe, the Italian peninsula is that in which water is found in the greatest abundance, whether in the form of seas, surrounding its extensive coast, or of rivers irrigating its surface, of lakes, of stagnant marshes, &c. Water, indeed, constitutes one of the most essential conditions of its climate. Of the extent of the general influence exercised by the waters of the sea on a surface, the width of which from the Mediterranean to the Adriatic is not considerable, some idea may be formed when we take into consideration the amount of coast which the peninsula presents; and which, commencing at Nice on one side, terminates at the Venetian territory on the other. Supposing the coast to be smooth and free from indentations, the line of shore washed by the two seas would amount to no less than six hundred leagues. But as these indentations or accidents are numerous and of great depth—more so, indeed, than in any other European country, England excepted—the amount of coast greatly exceeds those limits. In Europe generally, the difference has been inferred by Mr. Nagel to be as 1 to 3.03. In Italy, it is considered to be much more extensive, or as 1 to 5, furnishing, therefore, a surface of coast of not less than 3000 leagues. With these facts before us, we cannot but perceive the extent of the influence which the sea must exercise on the country—an influence which, from the deep indentations of the coast, is not restricted to the edge of the latter, but penetrates, in many places, far inland.

This liquid surface, as may easily be perceived, is an extensive source of evaporation, and affords us a ready explanation of the abundant nocturnal dews, and of the frequent clouds observed in those regions. Scarcely less influential in the production of these effects is the evaporation from the water, running and stagnant, situated on the surface of the country. In that part of Northern Italy which is enclosed on three sides by the high ridges of the Alps and the Apennine, comprising Piedmont, the Duchies, a part of the Papal States, and the Lombardo-Venetian kingdom, rivers, large and small, as well as other streams, exist in large numbers, and on a large scale, and form, on that vast surface, by their serpentine course, by crossing many lakes, and feeding the numerous canals made for purposes of irrigation and inland communication, a close net-work containing an immense amount of water. Dr. C. remarks that, laying aside the Po, whose extent is an object of wonder and admiration to him, as to all Europeans unacquainted with our American rivers; laying aside, also, those immense lakes, the Laggo Maggiore, the Laggo di Como, and the Laggo di Guardia, which he compares to inland seas, we find that the canals of the Milanese alone irrigate, in the fine season, a surface of not less than 168,900 hectares, or about 422,250 acres. From this immense and well-distributed liquid surface, great benefits to agriculture and commerce undoubtedly result; but it is not less evident that it must, at the same time, from the vast amount of evaporation accruing from it, exercise an injurious effect on the state of the atmosphere and the condition of the climate.

The more southern section of Italy—which Dr. C. denominates maritime—though less, is still amply provided with running streams, besides being, from its narrowness, more under the influence of the evaporation arising from the seas by which it is surrounded. Add to all this, the extensive evaporation, most of which is of an impure character, arising from the rice plantations of the Lombardo-Venetian kingdom, the Venetian lagunes, the *battures* of the Po, the marshes of Aquileia, the great lakes of upper Italy, the marsh surfaces extending from Baia and Puzzoli to Gaëta, the Pontine marshes, the maremme of the Etruscan coast, the less numerous, though still extensive marshes found on the Adriatic side, as far as the territory of Otranto, those situated along the coast of the Ionian Sea, as well as from the numerous lakes, scattered in various directions, as Bolsena, Bracciano, Trazimene, Fusino, Peroli, &c., and we shall at once perceive that the importance attached to the vastness of the evaporation in question has not been exaggerated. The modifying and injurious effects which under any circumstances could not fail to arise from this cause, will readily be understood to be greatly enhanced, if we take into consideration that much of this evaporation occurs from localities where the water is stagnant, and contributes to the formation of pestiferous exhalations.

We talk often, and foreigners talk still more, of the paludal or marshy and insalubrious condition of a large portion of our country; but, if we turn our attention to Italy, we shall find that, making allowance for the diminutive extent of the country compared to ours, it is, as a whole, far richer in such sources of exhalation, and that the inhabitants, while luxuriating in the mellowness of their atmosphere, and admiring the beauty of their sky, may rest assured that they are breathing an air, and exposed to other external agencies, far more injurious than those encountered on this side of the Atlantic. Be this, however, as it may, from the immense evaporating surface existing in the whole peninsula, as well as from the peculiar configuration of the country, we are prepared for the fact that the quantity of rain that falls is considerable. This is shown by the following schedule which Dr. C. borrows from Gasparin's *Météorologie Agricole:*—

1. *Southern or Maritime Region.*

Winter.	Spring.	Summer.	Autumn.	Whole year.
m m.				
195.2 (7.8 inches)	194.2 (7.8)	133.2 (5.3)	291.7 (11.7)	804.3 (32.2)
2. *Northern or Continental Region.*				
139.2 (5.6)	253.1 (10.1)	275.6 (11.3)	353.8 (14.1)	1021.7 (40.9)

From the results grouped together in this schedule, we perceive that the quantity of rain which falls in continental Italy is much larger than that obtained in the southern region of that country. This fact, which, from the circumstances of this region being pressed on each side by an extensive sea, might appear extraordinary, did we not know that the Lombardo-Venetian kingdom is covered with numerous rivers, lakes, canals, and agricultural marshes, and presents, therefore, an extensive surface to the action of evaporating agencies. Nor must we fail to bear in mind that the country is enclosed by high mountains on three sides, and offers, from its configuration, an obstacle to the mobility or free movement of clouds; while in Southern Italy, on the contrary, the open surface existing on each side of the Apennine, allows an uninterrupted passage to the clouds in the higher regions of the atmosphere. We perceive also, from the same statement, that in the whole of Italy more rain falls during autumn than during either of the other seasons, the latter months of the year being the true and almost only period of very heavy rains, and, as a consequence, of those terrible overflows which return at short intervals and occasion so much injury in various parts of the country. We find, moreover, that the quantity of rain is not distributed in the same manner in the northern as in the southern regions of Italy. In the former, the quantity which falls in winter and autumn scarcely exceeds that obtained in spring and summer. In the other, on the contrary, the amount in winter and autumn exceeds that in the other two seasons by nearly 6·5 inches (160 *m.m.*). When we add to this the diluvian character of those rains, by which an immense quantity of water, sometimes that of a whole winter, is accumulated on the earth in the short space of a few days or weeks, it is evident that the nebulous or cloudy condition of the atmosphere cannot be of long continuance, and that to humidity must succeed a comparative state of dryness, which continues without interruption for some time. This explains the serene beauty of the winter and autumnal seasons in several parts of the peninsula.

In the northern region, beyond the Apennine, matters assume a somewhat different character. During the winter months, comparatively little rain falls, but during the three other seasons the quantity is abundant, and is distributed in each season, and almost in each separate month, with tolerable equality. From this regularity it may easily be inferred that the rain cannot fall in very heavy showers, for besides that these manifest themselves in one season only, they are prevented by a variety of influences from occurring often in the course of the whole year. Hence these heavy showers are of rare occurrence, and often altogether absent, the rains being of a light character, often repeated, and sometimes of long continuance. This hygrometric condition produces naturally a cloudy state of the atmosphere, which, without excluding periods of dryness, and a certain purity of the air, renders them somewhat unfrequent compared with what occurs in the southern region of the country.

Need it be remarked that this humid condition of the atmosphere, the enfeebling and depressing effects of which are well known, exercises a decided influence over the physical and moral character of the inhabitants of those regions of Italy where it predominates.

"The Lombard does not possess the coloration of the Italian of the southern region. Though he has not degenerated completely from the men of iron to whom he traces his origin, his face betrays a certain degree of paleness, which is particularly remarked in women, among whom the power of physical resistance is more feebly developed. When this effect is not corrected by some suitable agency—ventilation, for example—it shows itself in a marked degree, and attains a morbid form in deep valleys surrounded with woods, and containing lakes."

"When we enter the regions of those autumnal rains which seem to deprive the sky of humidity and clouds for the rest of the year, we remark, with a different elevation, signs of a greater activity, produced, doubtless, in part, by the temperature, but arising, also, from the circumstance that the humidity exercises there a less prolonged influence on man than in the north."

Dr. C. properly remarks that this rule is not absolute, and that in many instances a variety of circumstances are found to conceal, or even destroy, the effect. But in some localities it manifests itself in a very marked degree, as, for example, at Sorrento, in the Gulf of Naples. In Tuscany, which serves as a place of transition between Southern and Northern Italy, there is a city placed at the outlet of the last valley of the Arno, and not far from the shores of the Mediterranean, where rain falls frequently and the atmosphere is often cloudy—Pisa. Here the population presents the characteristics assigned above to individuals exposed to the almost continued influence of a humid atmosphere.

Our author next notices the brilliancy of the sky of Southern Italy, a brilliancy which strikes with astonishment individuals arriving from the north of Europe, or even of France, and consists in a vivid and luminous azure, very similar to that characterizing the equatorial sky. It is observed in all parts of that region, from the upper limits of the kingdom of Naples to the Ionian Gulf. From the entrance of the Gulf of Gaëta, where it commences abruptly, the landscape appears more brilliant, clear, and very neatly and accurately defined, thereby indicating the absence in the atmosphere of any notable quantity of aqueous vapour. In Central Italy the azure is much less vivid, and the atmosphere presents a vagueness and indecision in the landscape which denote a higher degree of humidity than in the Neapolitan States. At the period of sunset, and during the twilight, the vapours are condensed, expand, and assume the most variegated and gorgeous hues. But this spectacle, though often magnificent, and presenting a mellowness characteristic of the harmonious sky of Latium, is far from possessing the dazzling brilliancy of the sunsets on the coast of Calabria and in the Gulf of Naples. When we ascend in a northern direction, and proceed beyond the mountains of Etruria, the sky is found to assume a different appearance. It is far from possessing the brilliancy of the sky of Naples, and the refined tone characteristic of that of Central Italy. The azure is feeble, and presents a milky hue similar to that observed in northern regions. As there, also, the clouds are condensed in rounded masses of unequal size, whitish, and fringed at the edges, and dark in the centre; while the light stultifications of the Roman sky are as seldom observed as the vivid azure of the southern region, except, perhaps, it be on the coast of the Adriatic.

Much has been said in antiquity and in modern times of the winds of Italy. It is a subject of considerable importance in a climatological point of view, and well deserves the attention which has been paid to it from the days of Pliny to our own. But we have only room for a few remarks upon it. The atmosphere, during spring, is calm, and the winds proceed from the west. The easterly currents, which are warmer, succeed to the former in proportion as the summer season advances. To these follow the southern winds which spread heat over the Italian soil. Towards the eighth of July the Etesian winds begin to manifest themselves. Emanating from northern regions, and being regular in their return, they disperse the clouds, keep up the serenity of the sky, and exercise a dry and tonic influence very different from the enervating effects resulting from the action of southerly winds. About the close of the hot season the wind again blows from the south or the collateral points, and the atmosphere becomes heavy and oppressive. Autumn is characterized by the northwest wind—the most impetuous of all those that prevail along the Italian coast. Finally, the wind, in winter, blows from the north.

"This wind must not, however, be confounded," as Dr. C. remarks, "with the Etesian, for if the latter is directly opposed to the south wind, the other has for its antagonist the southwest. This hibernal wind is therefore the northeast, or, more properly speaking, the north-northeast, which by the Greeks was denominated Boreal, and by the Romans Equilon."

This enumeration and distribution of the Italian winds, which is little more than those recorded by Pliny (lib. ii.), apply particularly to the Mediterranean coast. Thus, on that side of Italy, the spring winds which impart warmth to the atmosphere, whose temperature had been lowered during the winter season, encounter no obstacle.

> "They pass over the sea, which is warmer than the earth, and spread over the surface of the coast, to which they impart an agreeable degree of heat. But they cannot reach the Adriatic zone of the country without passing over the Apennine, and becoming cooled by contact with the snow which covers the top of those high mountains. The spring wind of the Adriatic coast is hence the east, and not the west wind, for the latter must be arrested on the side of that high ridge which divides the peninsula into two parallel zones. For the same reason, the east wind is more readily felt on the Mediterranean shore; since it must, like the former, pass over the Apennine. We have seen that during the summer season the prevailing winds were the south and Etesian. The latter, which proceed from the north, have a free access on both sides of the territory, and are equally felt on the Adriatic and the Tyrrhenian coasts. Not so, however, with regard to the equatorial winds. In consequence of the inclination of the western coast, which leans from northwest to south, the west, southwest, and south winds reach the coast in a direct manner; while on the other side, which presents a contrary exposition, the southwest and south winds penetrate with difficulty, the passage being free only for the southeast and east winds, and those occupying an intermediate position between the latter and the north winds."

The statements made in respect to the southerly winds apply to the northwest—the *mistral* of Provence, the *sciron* of Athens, and the *circius* or *cers* of some parts of the south of France. Like the west and south winds, the latter, which takes its origin or assumes the peculiar character it afterwards exhibits, to a greater or less extent, in the south of France, passes freely along the Mediterranean coast of Italy; but on the other side of the Apennine, where the topographical condition of the country is diametrically opposed, its influence is but slightly felt.

As may be inferred from what precedes, the north and northwest are the coldest winds of Italy, and, though sometimes attended with hail, they usually accompany clear weather. The north-northeast is mostly attended by a grayish and snowy hue of the sky, which generally ends with a fall of snow. The damp winds are the south and southwest—the *auster* and *Africus* of the ancients. The driest is the northwest; the hottest the south; the mildest and mellowest the southeast and west; finally, that most conducive to health is the north-northeast. The most enervating is the southeast, or *sirocco*, which prostrates the moral and physical energies of the inhabitants. This deleterious influence which is felt to a certain extent in the south of France, from the Pyrenees to the mouth of the Rhone, attains the greatest intensity in Italy, and especially in that part of it facing the Ionian Sea and the Grecian Archipelago. It is, like other southerly winds, charged with humidity.

> "Its action on the human organization during the summer season," says Dr. Salvagnoli, "cannot be exactly expressed by words. When it prevails, persons in good health feel prostrated, their muscular movements are sluggish, the head is heavy and painful, they feel sleepy, and their appetite decreases. Convalescents easily relapse, and the sick become worse."

The south wind (*mezzogiorno* of the modern Italians) presents great analogy to the *sirocco*, especially during the hot and oppressive days of autumn. Nevertheless, imbibing, as it does, less humidity in winter, it disperses the clouds that arise from northern agencies, and contributes thereby to the production of clear and fine weather. This takes place sometimes in summer, but is necessarily more frequently observed in winter, from the excessive aqueous saturation existing in the former season, and the feeble degree of it occurring in the latter. The southwest wind, which, from the place of its origin, was anciently denominated *Africus*, and is called by the modern Italians *libeccio*, bears, in many points, a great analogy to the preceding. It is damp and rainy, but differs from the *sirocco*, which, though sometimes strong, is seldom violent, and from the *mezzogiorno*, which is usually calm, in this that it scarcely ever prevails without agitating the atmosphere tempestuously. The west wind, the zephyr of the ancients, and the *ponente* of the Italians, is warm in spring and cool in summer. The east wind, the *subsolanus*, or Levante, is milder, but less serene. The north wind, or *tramontana*, is characterized by a low temperature, and great dryness, produced by its passing over an extensive continental surface. It disperses the clouds, and is an attendant on fine weather, though in winter it is accompanied with snow, and in summer with hail. It exercises a fortifying agency on the human system, and must be considered as the best antidote against the enervating effects of the *sirocco*. The north-northeast is very violent, and blows frequently over the peninsula. It is often attended with a dry, though sometimes with a humid, condition of the atmosphere.

We pass now to the temperature of Italy. The country, considered in its *ensemble*, presents most, though not all, of those causes which Humboldt has enumerated as favouring the development of a high annual average of atmospherical heat: *i. e.*, proximity to a western coast in the temperate zone—the configuration of a continent presenting peninsulas and inland seas—the relations of position of a part of that continent either to a sea free from ice, and extending beyond the polar circle, or to a considerable extent of continental surface placed between the same meridians, under the equator, or in some part of the tropical zone—the preponderance of southerly or westerly winds, at the western extremity of a continent of the temperate zone—chains of mountains serving as means of shelter against the action of winds proceeding from colder regions—the absence of marshes, and the clearing of an arid and sandy soil—the habitual serenity of the sky during the summer, and the proximity of some southern stream rolling waters of a higher temperature than that of the surrounding seas. At the same time the country, doubtless, presents some of the conditions of locality which, according to the same eminent traveller and philosopher, tend to counterbalance the former, and thereby contribute to lower the annual mean temperature. But, on close examination, it will be found that the causes of calorification preponderate, and that from their agency, aided by other circumstances, the country derives the mild climate for which it has ever been noted. More than any peninsula in Europe it is intersected by gulfs, surrounded by seas, and covered with rivers and lakes. The width of the territory, from the Mediterranean to the Adriatic, is of limited extent, and the whole surface, from the foot of the Apennine to the margin of the former sea, is consequently freely exposed to the action of the western influences, which tend to raise the temperature. That the heat should be more notably felt on the western than on the eastern side of the Apennine is easy to conceive, when we bear in mind that the former is more open to the agency of westerly winds, which preponderate in the zone of middle latitudes in both the northern and southern hemispheres, and effectually raise the temperature during the winter season; that these winds are, from the extensive barrier of the Apennine stretching from one extremity of the peninsula to the other, protected from any serious antagonism; that the topographical conditions on that side are such as to favour the admission of those winds, and of those proceeding from the south; that the soil has been very extensively cleared, and is thereby enabled to feel, in a direct manner, the action of solar heat; that from the serenity of the sky during the summer months, no obstacles are thrown to the direct calorification of the earth, of the watery surfaces, and of the lower strata of the air; and that, to some though limited extent, the influence of the southern stream which produces such heating effects on other parts of the European coast—that of the Gulf Stream—is felt on the western side of Italy. To this it may be added that the other coast is less indented, and its depressions are less extensive; that while the Apennine protects the Mediterranean side from the influence of northerly and easterly winds, which have free access on the other, the same chain secludes, in great measure, at least, the Adriatic zone from the genial effects of southerly and westerly breezes, and that this side is exposed to the influence of a large continental surface, deprived of sea, and extending uninterruptedly to the polar region.

Two isothermal zones pass over the Italian peninsula—the one more southern extends between the 59th and 68th degrees of temperature of Fahr. (15° and 20° Cent.); the other, which is northern, extends between the 50th and 59th degrees (10° and 15° Cent.). The first, or warmer zone, is bounded on the south by the African shore of the Mediterranean, and on the north by a line which, on its exit from the Atlantic, passes over the superior frontier of Portugal, the sub-Pyrenean regions of Spain, the ancient province of Roussillon, and a portion of the coasts of France and Liguria; next cuts across the Italian peninsula, above Rome, somewhere about the frontiers of Tuscany, and after passing over the Apennine suddenly extends to the Adriatic. The second zone, which is colder than the former, includes the upper region of the territory, from the limits traced above Rome to the northern and western confines of the Milanese. It is that under which are placed France and the southern portion of the Britannic group. By this arrangement we arrive at a knowledge of the extreme limits of the temperature. The higher or warmer zone passes over the African coast, the colder to the north of France and Germany. The mean temperature in the former does not exceed 68°, while the mean in the latter does not descend so low as 50°. Nor is this all. The isothermal line which divides the warmer zone from the colder, after crossing the Apennine, inclines suddenly towards the south before extending to the sea, thereby leaving behind it a large territorial surface consisting of the regions bordering the Adriatic. The isothermal line divides, therefore, the eastern zone of the peninsula into two sections, the mean temperature of one of which must be higher than that of the other—an effect due to a difference in the character of the winds that prevail; the northeast, cold and dry in the one; the southeast, hot and damp in the more southern section. In the eastern, or Adriatic zone of the peninsula, the difference between the isothermal and isochimenal lines, or of equal summer and equal winter heat, is much greater than is found to be the case on the Mediterranean or western side of the Apennine. Thus at Bologna, which, in the former, occupies a central position between the superior confines of the Lombard kingdom and the northern frontiers of the Neapolitan States, the mean temperature in winter is 35° F., and in summer 77°; while at Lucca, which is in nearly the same latitude, but on the western side of the Apennine, the mean temperature in winter is 40° (4.6 Cent.), and in summer 74° (23.6 Cent.).

On the western side of the peninsula the isothermal line assumes a rather different course. We have seen that the line which separates the southern from the northern zones passes above Rome, and after having crossed the Apennine inclines suddenly towards the south. In doing so it describes a curve, which encloses within its concavity the whole of the Gulf of Genoa, the territory of Lucca, Tuscany, and the rest of Italy. Hence, whilst on the western side of the Apennine, this isothermal line, by ascending southwardly, expands the region of high temperature, on the other, or Adriatic side, it gives rise to contrary effects, for, by descending towards the south it diminishes the limits of the hot region. It may be remarked, in conclusion, that, however widely the various places in this section of the country may differ in regard to latitude, they approximate closely in respect to their winter and summer mean temperatures. Naples presents a mean temperature in the former season of 50° (9.9 Cent.), and in the latter of 74° (23.9). Rome gives 47° (8.3) in winter, and 73° (22.9) in summer. Lucca, as already seen, exhibits a winter temperature of 40° (4.6) and a summer temperature of 74° (23.6); and finally, the thermometer at Nice gives 49° (9.3) in the former season, and 72° (22.5) in the latter. This analogy of temperature in places so distantly situated from each other must, of course, depend on the preponderating influence of some general agency, which Dr. C. very properly traces to the southerly winds.

It is a fact too well understood to need illustration in this place, that a humid and hot constitution of atmosphere, particularly in the vicinity of the sea, is attended with the development of electric and meteoric phenomena. Dry heat accumulates electricity in the higher regions of the atmosphere; a humid state of the air, on the contrary, attracts it to the surface of the earth. The details into which we have entered relative to the western territory of the Italian peninsula show that it is particularly well disposed to promote the manifestations of those phenomena. The Mediterranean, from the numerous and extensive irregularities of the coast, penetrates deeply inland and forms a series of inland lakes, which present very extensive surfaces to the action of the atmosphere; while the country abounds in lakes and marshes. These surfaces exercise an active agency in promoting electrical communication between the inferior and superior strata of the atmosphere. The same effect is powerfully aided by the numerous peaks and sharp points by which the central mountain chain is characterized, and which perform the office of condensers; while the volcanic constitution of the soil naturally tends to increase the development of the fluid. From this development, which manifests itself in various ways and in various degrees of intensity, necessarily result effects more or less evident on the population exposed to its influence. Hence in every part of the western coast—with the exception of high and mountainous districts—the effects in question are strikingly observed. Thus, as Dr. C. remarks, if we visit Naples, or Rome, or Florence, and inquire into the physiological and pathological conditions of its inhabitants, we shall find that the nervous system plays the principal part in the acts of life, and that the activity of the function of innervation is carried beyond the limits of health.

He remarks that he had occasion to see, at Naples and Florence, individuals who exhibited curious examples of nervous disorders unknown in France and in the north of the European continent; and that, in investigating the general physiognomy of the most common disorders, he was not surprised to find that the principal element appertained to the domain of sensibility.

> "From this we would infer that the climate of the western zone of Italy is one of nervous agitation—of organic perturbation—from which the inhabitants suffer, and the sick should be shielded."

Fortunately these inconveniences are not constantly carried to a very great extent; being temporarily checked or diminished by particular conditions of the atmosphere. Violent storms, which in certain seasons are of frequent occurrence, spontaneously dissipate violent electric tensions; while the vesicular vapour which is almost constantly present in the air acts as a drain, which keeps up a sort of equilibrium in the high regions of the atmosphere, and thereby prevents, in ordinary times, the effects from being unduly felt.

It has thus been seen, that Italy, considered in a climatological point of view, may be divided into two regions or zones, separated from each other by the Apennine chain. The western receives the influence of the warm or southerly winds—the eastern zone is exposed to that of opposite currents. In the former, the evaporation being, from the higher temperature of the atmosphere, more considerable than in the latter, the humidity is greater also, but not of long continuance; in the latter, the heat being of less amount, the humidity is not so great, but continues longer. From these circumstances, there results a difference in the nature of the rains. In the western zone they fall in heavy showers, and only during a single season; in the eastern, they continue longer and are more equally distributed throughout the several seasons. In the former, the atmosphere is more frequently clear than in the latter. In the former, also, the hygrometrical constitution of the atmosphere, the condition of the soil, and the position of the country promote the development of electricity; in the latter or cold zone, contrary conditions prevailing, the electrical developments are less marked. In the former, again, the thermometer, owing to the position of the territory, ranges higher in winter and lower in summer than in the latter; but with more frequent oscillations in the barometer. Finally, the western zone is largely supplied with sources of miasmatic exhalation; while the eastern, though not entirely free from them, are much more favourably conditioned in that respect.

But, although a line of distinction may be fairly drawn between the climates of the western and eastern zones of the Italian peninsula, the differences exhibited are not equally striking in every portion of the territory. A difference in the situation of places, or in the relative position of the seas or continents, occasions not unfrequently in their climate a new source of influence by which the latter is more or less modified, and made to approximate that of localities distantly situated. This is exemplified on both sides of the Apennine.

> "In the portion of the Adriatic coast forming the extremity of the peninsula, the atmosphere is under the control of the S. and S.E. winds. This region is almost as warm as the surface along the coast of the Mediterranean. This condition prevails as far as the Gulf of Manfredonia, at which point much greater changes occur. The southerly winds continue to prevail; but those from the E. and N.E., and even from the N., begin to predominate. As we advance northwardly, this predominance increases, until it finally becomes complete, and thereby lowers the annual mean temperature. On the western coast, the character of the influence changes at the angle formed by the Apennine above the Ionian Sea. As we ascend along the Calabrias, it becomes more marked; it does so even higher, notwithstanding the occurrence of the N. W.—the *maestro* of the Italians. Finally, in the plains of Latium, and on the coast of Etruria, the influence of the southerly winds becomes modified; not so, however, with respect to the W. wind, the intensity of action of which has not diminished. But, when the Apennine and the coast suddenly assume another and different direction, and instead of proceeding from south to north, do so from east to west,

the southerly winds again become predominant, and conditions analogous to those existing before are re-established."

Having entered fully on the climate of the western and eastern zones of Italy, Dr. C. passes to the consideration of that of the three divisions he has made of that country, the Southern, Central, and Northern, and of the different important cities they contain; premising some general remarks on the atmospheric condition and topography of each of those divisions. Nor is this division purely arbitrary. It is justified by the difference observed in the sky of the southern provinces of the central territories of the peninsula, and of the continental regions of the Milanese. Equal differences are discovered in the products and modes of cultivation of those different parts, as well as in their temperature. Interesting and important, however, as this subject may be, ably as the author has treated it, and useful as it doubtless would be to point out the results of his investigations, we have no room to present even a brief abstract of these, and proceed at once to the consideration of the climate of individual cities or districts. But, even in relation to these, we must restrict our inquiries within narrow bounds, and content ourselves with presenting some remarks on a few of those places usually resorted to by invalids, and most deserving of regard in medicinal and prophylactic points of view—Naples, Rome, Pisa, &c.

Naples.—Though the city and basin of Naples are apparently surrounded on all sides, that of the bay excepted, by high mountains, the effect of which may be supposed to shelter them from the active influence of winds from the principal points of the compass, experience shows that the protection they really afford is very limited and imperfect. These mountains are all ancient volcanic cones, whose original shape has been disfigured through the action of time and the work of man. Posilipo, which extends as far as Capo di Monte by successive hills of greater or less elevation, constitutes the most efficient portion of the barrier. From Capo di Monte to Vesuvius, the hills gradually lessen in height, and leave large interstices between them; and it is only at the extremity of the arc, in other words in the region of Vesuvius, that the basin becomes effectually protected. The gulf being open to the S. W. and W., the winds blowing from those points have free access to the quays of the city. If to this we add, that the basin of the latter experiences the effect of those winds that extend over the adjoining hills, and along the edges of the two lateral branches of the Campanian gulf, we shall at once perceive that the atmosphere of the place must be subject to numerous vicissitudes. The bay front of the city being semicircular in shape, the extremities and centre projecting out, it follows that the exposure of these two divisions is not similar, and that the winds which exercise their action upon them are different also—the one being open to the N. N. W., and the other to the S. W. From its exposition and topographical condition, which we cannot particularize here, the former is under the powerful influence of the N. W. wind or *mistral*—which, as we have seen, is the most impetuous and searching of all those that visit the Italian coast. It blows violently along the quays of the Margellina, as far as that of St. Lucia. Posilipo offers an obstacle to the N. wind—the Somma does the same as regards the E. wind; but the N. E. finds admission through the depression existing between Capo di Monte and Capo di China; the S. E. and the S. pass along the sea margin of Vesuvius, or cross the gulf and over the high ridges of Castellamare and Sorrento; and the S. W. and W. penetrate freely into the city from the open expanse of the Tyrrhenian Sea. Hence the less frequent currents are those from the east, the southeast and the north; and the most frequent those that blow from the sea or along the edges of the gulf. The scale of the proportional influence of those various winds may, according to our author, be stated as follows: The S. W. or *libeccio*, which is predominant at Naples, being represented as 5, the S. will be found to prevail as 3; the N. as 2½; the N. W. as 2¼; the W. as 2; the N. as 1¾; the S. E. as 1⅓; and the E. as 1. From this we find that the northern influences stand as 6; while the antagonistic winds stand as 9.

The superiority of action of southerly winds, which, before reaching Naples, pass over water surfaces of great extent, imparts to the atmosphere of that part of the Campagnia a considerable degree of humidity. These winds prevail particularly during spring and summer, and continue till the opening of autumn, sometimes as late as winter. But though predominant during that long period, they are so only in a relative manner; being often replaced by the Etesian winds, which, as has been stated, promote the serenity of the sky during the summer, and exercise a great influence over the atmosphere of the peninsula.

Rain falls in greater abundance during the months of October and November. December, during which the north winds prevail frequently, is comparatively free from rain; and January still more so. The driest months are June, July, and August—particularly the first and third—an effect due to the regular supremacy of the Etesian winds. The amount of rain which falls during the course of the year has been differently estimated. M. Cavasco states it at 950 millimetres, or 38 inches, and De Renzi at 750 millimetres, or 30 inches; while our author thinks the estimates of the former too high, and those of the latter too low. Admitting this to be well founded, we may presume the quantity to amount to 850 millimetres, or 34 inches.

Owing to a variety of causes of a topographical character, the climate of Naples exhibits frequent alternations in regard to the degree of humidity. This fact, which may startle those who, without personal experience on the subject, are familiar with the praises which poets have lavished on that climate, is amply verified by the results of accurate hygrometrical and barometrical observations. Clouds frequently accumulate, rain falls often, and heavy thunder showers are not rare. The changes are sudden and extensive, and vary considerably in the course of a single day; while it may be assumed that the proportion of fine and clear days, comparatively, to those of a contrary character—gloomy or rainy—varies from one-fifth to one-fourth.

If we inquire into the effects on the economy of the more important winds which prevail at Naples, we find that the south-west, though cloudy and rainy, does not impair the energies of the system so effectually as other southerly winds. The south and south-east—the *ostro* and *sirocco*—which present a great analogy to each other in their effects, and penetrate freely into an extensive section of the city, exercise on the inhabitants the enervating influence we have already described. The north-west (the *maestro* of the Italians), which, as we have seen, blows violently along a large portion of the bay side of the city, is cold and damp; and, among other morbid influences, produces a violent and hurtful impression on the skin and on the nervous system.

These unfavourable conditions of the climate, resulting from the causes mentioned, are in some measure corrected or counterbalanced by the elevated temperature of the atmosphere. The annual average height of Fahrenheit's thermometer at Naples may be estimated at 60° (16.5 Cent.); that of other localities of the bay being about 59.5 (15.9). The winter average in the former is 49° (9.8); that of spring 60° (15.2); of summer 74° (23.8); and of autumn 61° (16.8), or even 62°.6 (17). It is remarked by our author that the difference in the averages of the several seasons not being very considerable, the consequences resulting from it would not be of a serious character, were the transitions to occur gradually. But, if temperature modifies the physiological effects of winds, these moderate or neutralize the effects of the former. In consequence of the manner in which the succession in the course of the aërial currents takes place, they change completely, from morning to night, the character of the climate, producing a sharp dry cold, after having promoted a hot and humid influence. But though from these and other circumstances we may not expect to find the thermometer rising very high, and descending quite low, yet the maximum temperature does not exceed 101° (38.7), while the minimum is scarcely ever lower than 23° (or 5° below zero, Cent.). Naples is subject to those meteoric phenomena which more particularly appertain to northern climates. Ice is common in winter, snow falls not unfrequently, and hail may be regarded as of common occurrence. Finally, the atmosphere is often charged with electricity, and contaminated, in many parts, with volcanic emanations.

From all these circumstances—the frequent atmospheric vicissitudes, the electrical tension, and the impure composition of the air resulting from its admixture with emanations of a stimulating character—there results for the animal economy an influence of a most exciting kind, which increases gradually the mobility of the nervous system, and acts very powerfully on strangers who visit that part of the Campanian territory. But the effects of the climate vary somewhat in the different portions of the city and its environs. The quays from Posilipo to Chiatamone are spacious. At the furthest extremity they extend to the beach; in other parts they are separated from the latter by a garden of great magnificence, *la Villa Reale.* This is the fashionable part of the city, and is mostly frequented by foreigners. The garden, as our author very properly remarks, has the disadvantage of weakening the influence of the west wind, which is cool in summer and genial in winter; but, at the same time, it has the advantage of freeing that part of the city, which is denominated Chiaja, from the more or less perturbating effect of the south-west wind. The west wind reaches more freely that portion of the quay nearest to Posilipo, and which, in consequence, is warmer. The front part of the city, from Posilipo to Sta. Luccia, is under the influence of the cold and damp searching blast of the north-west, which blows along its extensive margin with irresistible impetuosity. It is of much more frequent occurrence than usually supposed; for, during the autumnal and winter seasons—those in which it prevails most generally, though not exclusively—we hazard nothing in saying that it blows more or less continuously during some portion of every fourth day. To delicate temperaments and valetudinarians the effect is highly injurious. It suddenly checks perspiration, occasions acute thoracic affections, and deranges more or less seriously the organs of the circulatory and nervous systems. To individuals in feeble health, and to the sick generally, we cannot too strongly insist on the propriety of avoiding this locality, magnificent and agreeable in many respects as it undoubtedly is.

The part of the city situated beyond the cone of Saint Elmo extends from west to south-east, and is sheltered from the effects of the north wind, which passes over it, as also in great measure from those of the north-west. It is healthy, and would be still more so if kept in a proper condition; but it is objectionable as a residence for invalids, from the too rapid ascent of the streets, and its exposure to the influence of the south-west wind.

In that portion of the city located on the other side of the street of Toledo, which constitutes the eastern and southern districts, and where we must look for the site of ancient Parthenope, the injurious influences are not felt. We need not dwell on this locality, as its narrow, obscure, and irregular streets offer no attraction to, and will naturally be avoided by, travellers and invalids, who, if such were not the case, would be deterred from residing there by the long-recognized insalubrity of the soil. This insalubrity extends beyond the inhabited portion of this district, and manifests itself in the form of intermittents on the outside of the city wall, and on the level surface extending from the foot of Capo di Chino, la Somma, and Vesuvius to the sea. Be this, however, as it may, the eastern and southern portions of the city present some advantages over the northern. Its atmosphere is less oxygenated and less exciting, being free from the influence of the north-west winds; while Vesuvius shelters it from the enervating effects of some of the southerly currents. Its atmosphere does not, like that of Chiaja, suppress perspiration, or affect injuriously the nervous system, or the organs of the pulmonary and circulatory apparatuses. It is the zone of chronic, not of acute diseases. Whilst, therefore, invalids, those particularly who are affected with thoracic and neuralgic complaints, must avoid that part of this region presenting the unfavourable characters above pointed out, they may advantageously select another, situated between Capo di Chino and the superior extremity of Toledo, where they will find level streets and imposing and elegant monuments, where the southerly winds prevail with less energy than elsewhere, and where the air is renewed through the healthful influence of the north-east.

But although some benefit might be derived in pulmonary complaints from a residence in this locality, it is doubtful whether the benefit is sufficiently marked to justify the recommendation of Naples as a place of residence to individuals affected with tubercular phthisis; for even the most favoured spots are, to a certain extent, subject to the atmospherical vicissitudes we have noted as forming a characteristic peculiarity of the climate of that beautiful city, and which, as is well known, acts injuriously in this and other forms of pulmonary disease. It is objectionable, moreover, from the exciting influence of the atmosphere—which, as already stated, stimulates strongly the nervous system—as also from the difficulty experienced here of resisting the pleasure of daily excursions to places of interest; a course suitable to few, and which cannot be indulged in with impunity in all cases. "Le séjour de la capitale des deux Siciles ne doit être recommandé qu'aux malades qui n'ont pas besoin de se condamner pour guérir, à la retraite et à l'inaction." The opinion of our author on this subject is not different from that entertained by Sir J. Clark, who, after condemning the climate for consumptive patients, remarks that it is well suited for those who are labouring under general debility and derangement of the constitution without any marked local disease.

Dr. C. agrees with De Renzi and others in regarding some parts of the Bay of Naples as appropriate places of resort for phthisical patients, and as preferable in that respect to the city itself. In speaking of Puzzuolo, the temperature of which is mild and agreeable, he refers to the statement of that Italian writer, who considers the air of this place as highly beneficial in phthisis, especially when the disease is complicated with acute irritation of the mucous membranes of the larynx, trachea, bronchiæ, and digestive organs. That the environs of Naples have been supposed to abound with that disease—more so, indeed, than Paris and its vicinity, where the disease prevails extensively—is certainly true. It has been shown, for example, in corroboration of this, that while deaths by tuberculization in the hospitals of Naples occur in the proportion of one to two and one-third of the entire mortality, they are found in the civil hospitals of Paris to be as one to three and one-quarter.* But it should be borne in mind that, whatever may be the unfavourable results obtained in the Neapolitan establishments, such results cannot be adduced against the climate of Puzzuolo, since the sick admitted in those hospitals, and who fill up the list of consumptive complaints, mostly come, not only from Naples itself, but also from other places in the vicinity, where the disease is of very frequent occurrence. The climate of Puzzuolo being of a nature calculated to mitigate, or even remove the symptoms of phthisis, must necessarily produce equally favourable effects in diseases of kindred character, chronic bronchitis and laryngitis, and the like. De Renzi attributes a large share of this beneficial agency to the sulphurous vapours issuing from the soil of these regions, and which, aided by the mild temperature of the atmosphere, impart, as he thinks, balsamic qualities to the latter, and thereby render it useful in the diseases mentioned.

Dr. C. is not less disposed to entertain a favourable opinion of the effects of the climate of Mola de Gaëta in pulmonary complaints, particularly in that form of phthisis attacking individuals of a lymphatic temperament. It is also beneficial in nervous affections, characterized by a tendency to prostration, when it is necessary, while allaying excitability, to impart tone to the system.

Rome.—The climate of Rome and its environs has been the subject of extended inquiry, and occupied the pen of many native and foreign writers. Dr. C. has examined it somewhat in detail, both in a general and medical point of view, and has more accurately than any of his predecessors, as we think, indicated the peculiarities by which it is characterized, the causes of these peculiarities, and the physiological, pathological, and medicinal effects to which they give rise. But in doing so, he has enlarged on many points of a topographical nature, which, though highly useful and interesting as well as necessary towards a clear elucidation of the subject, are somewhat foreign to the object we have in view; and must, therefore, be passed by unnoticed. The Rome of modern times is not located on the same surface as the Rome of former days. It occupies the site of the ancient Campus Martius—to the north of the other; while the City of the Emperors was situated on the seven historic hills, and on a plain which extends in a southerly direction, and is now almost deserted, and more or less covered with ruins. The position of the old city was highly unfavourable to health. The surface upon which the population thronged commences at the southern extremity of the Cœlian and Esquiline hills. It inclines in an eastern and northern direction, passes behind the Viminal and Quirinal, and, extending beyond the gates of St. Jean Lateran and Sta. Maria Maggiore, stretches nearly as far as the hills of Albano and Frascati. The city was exposed, therefore, to the free action of the south and east winds, the effects of which were not counterbalanced by those of the northern currents, whose access was in great measure impeded by the mountainous ridges situated at the back part of the plain, and which were at the time covered with thick forests. From this the temperature of ancient Rome must have been higher than that of the present city; and this excess of heat, operating on a surface covered with marshy pools and stagnant water, and consisting of a volcanic and imperfectly consolidated soil, accounts for the insalubrious nature of the city. This injurious effect was doubtless in great measure corrected by the draining of the soil and the erection of aqueducts and analogous monuments; but the result was not entirely successful.

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* Journé, Recherches Statistiques sur la Phthisie en Italie, Bul. de l'Ac. de Méd., vol. iii. 542.

The Rome of modern times presents conditions of a very different character. Though enclosed on the east by the Pincian, Quirinal, and Viminal hills, and on the west by those of the Vatican and Janiculus, the valley of the Tiber is not completely sheltered on either side from the influence of the winds blowing from those directions. At the same time, owing to the position of other hills and distant mountains, the south winds, which, as above stated, had free access to the ancient city, reach the modern with some difficulty, being in a measure impeded in their course by the Capitoline and Palatine hills, and other irregularities of the soil. From this, and from the fact that the northerly winds have a freer access to modern than they had to ancient Rome, we find an additional reason for inferring that the temperature of the former is lower than was that of the old.

The condition of the soil of the Campus Martius, which is now covered with streets, was, and is now in some of its parts, of a character suitable to the production and accumulation of humidity. Low and flat, and bordering on the Tiber, it was, and is still to a certain extent, subject in particular seasons to overflows. That part of it which was called the Velabrum, and from the nature of the commerce to which it was appropriated, received the name of *Forum Boarium*, was regarded in ancient times as highly insalubrious. It forms a connecting link between the old and the modern city, is occupied by the lowest classes of the population, is characterized by narrow streets, irregular pavements, and a defective level, and is now as unhealthy as it was in former days. The insalubrity of the surface upon which the city stands has been greatly lessened. Purified by Leo the Tenth, the soil was soon covered with streets; churches and houses were multiplied; and, before the close of the reign of that pontiff, the population amounted to 60,000. The narrow valley between the Tiber and the foot of the Pincian hill, by which we now enter Rome, was transformed from a vast marsh into the beautiful Piazza del Popolo; and other quarters were, by succeeding pontiffs, greatly ameliorated.

The city is abundantly supplied with water of good quality, not by twenty-four aqueducts, as in ancient times, but by three—those of the Aqua Vergine, the Aqua Felice, and the Aqua Paolo; and though the supply—9,025 inches (French), or 180,500 cubic metres in the twenty-four hours—would not have been sufficient, had the inhabitants retained the habits of bathing for which their ancestors were noted, it is amply so for drinking and ordinary household purposes.

We have stated that the north winds have free access into the city, and that those from the south are in a measure impeded in their course. This impediment is not so effectual, however, as to prevent them from preponderating over the former. The direct opposition in the several points of the horizon whence are derived the prevailing winds accounts for the sudden transitions which occur in the anemological conditions of the atmosphere. These transitions are less frequent during the day than in the morning and evening. During the former period, the south winds prevail; during the latter, though particularly in the morning, the antagonistic currents have the ascendency. Calandrelli states the proportions of warm and mild winds—S. E., S., S. W., and W.—to be 62 in 100. Other authorities give analogous results. But this law of preponderance is not absolute, the northern winds being in some years more frequent than the others. According to the Italian writer just cited, the most frequent wind is the *Africus*, or southwest, which reaches Rome by

Albano, Ardea, or even the sea. Next in point of frequency appears the south wind, then the north-northeast, next again the southeast, or *sirocco*, and lastly, the northwest, or *mistral.*

The preponderance of damp over dry winds imparts to the climate of Rome hygrometrical conditions of a marked character. Everything contributes to this effect—the position of the country—its exposure to the influence of a large expanse of sea—the river, and its periodical overflows, and the condition of the surrounding surface. We have already referred to the immense amount of water carried to the various sections of the city by means of aqueducts and subterraneous canals. At present the quantity which reaches it does not amount to more than one-sixth part of that obtained formerly, while the largest share of the balance has been lost, and has contributed to the formation of marshes or lakes, with which the depressed portions of the soil of the surrounding country are studded, and which tend to keep up a humid state of the atmosphere. At Rome, indeed, the hygrometer seldom indicates a state of complete dryness. Rain falls to the amount of a little over 32 inches (29 inches French). The average number of rainy days in the year, in a series of 89 years, is 114; the minimum being 58 (1828), and the maximum 158 (1784).* The number of clear days, or those in which the sun shines, is tolerably large. In 1784 it amounted to 58, in which the sky was perfectly clear; while that of cloudy days was 93. In 1828 there were 84 of the former and 45 of the latter. The atmosphere at Rome is far from being so clear and brilliant as at Naples and in Calabria—the light being mellowed by the existing humidity. The high temperature in the city and environs is promoted by the topographical disposition of the country, which is mostly enclosed by a semicircular chain of mountainous ridges, but open in a western and southwestern direction, by which access to the warm and humid currents is allowed. Were it not, indeed, for the antagonistic influence of the north winds, the thermometer at Rome would attain a very considerable degree of elevation. As it is, the prevailing heat is equal to that of more southern regions; the city occupying the same isothermal position as Gaëta, Naples, and Calabria. In a series of twenty years the mean annual temperature was found to be 60° (15.46 Cent.). Winter gave 47° (8.01); spring 58° (14.29); summer 73° (22.91); and autumn 61° (16.49). From this it will be seen that the difference between winter and spring is not so great as that between spring and summer; while the difference between summer and autumn approximates closely to that between spring and winter. The maximum heat is 100.4 (38°); the minimum 23° (5.9 below zero), showing an oscillation of near 77° (44). Hence Rome presents very hot, and sometimes very cold days. The Soracte, "the giant of the Roman horizon," is almost every year covered with snow. Ice is often formed, and in the winter of 1812–13 was thick enough in the lake of the Villa Borghese, to bear the weight, during several days, of numerous skaters. Snow falls, on an average, one day in every year. In 1784 it did so during five days.

It follows, from what precedes, that, notwithstanding the intense heat and sharp cold of some days of summer and winter, the atmosphere of Rome is rarely extremely dry or extremely humid. Our author has, in imitation of Sir James Clark, noted this quality of the Roman climate, and, like that distinguished writer, ascribes to it the superiority which the air of that city possesses over that of other localities of Italy and France. But this advantage is in some measure counterbalanced by the frequent thermometrical and hygrometrical depressions which occur in that climate—changes which have been noticed from time immemorial, and caused the climate of Rome to be accused of inconstancy. Fortunately, however, the physiological effects resulting from them are not so great and injurious as might have been anticipated, and are in part corrected by the peculiar condition of the air; for, notwithstanding the real depressions of the hygrometer, the peculiar mellowness of the atmosphere does not disappear completely, and the impression it produces continues to be felt, though often feebly, even in the coldest days of winter, by individuals whose constitutions are unused to the influence of cold latitudes. Such changes occur particularly during the first weeks of winter. After December, northern influences predominate, and cold and dry winds prevail; but they seldom continue more than a few days at a time, and are succeeded by others of an opposite character. Towards the close of February, cold days become less frequent, and spring, which is very precocious, opens in April—sometimes as early as March. This season, which in many respects resembles the summer, approximates, however, closer to winter as regards the mean temperature. The transition becomes more sensible toward the close of May or the beginning of June, the former of which months is sometimes very hot. During June and July, the force of evaporation attains its highest point, and meteorological changes are very frequent, as manifested by a clear and dry atmosphere, alternating with showers of rain, attended with electrical phenomena. This is the season of the Cattiva aria, which continues till September, when the heat diminishes in a notable manner, or even till October, one of the pleasantest months of the year, and the favourite among the Romans. Finally, November bears some analogy to October, while December is characterized by an alternation of heavy rains, and sharp, cold weather.

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* In 1826 it was 82. There were 30 days of fog.—*Giornale Arcadica.*

In former days, that part of Rome on which the population was accumulated, and which is now almost deserted, was healthy—comparatively so, at least; while the insalubrious sections were the Campus Martius, the Velabrum, and other parts bordering on the river—the site of the modern city. Whether this freedom from fever in the old city arose from a positive degree of salubrity in the soil, as has been thought, or whether the change has arisen from the operation of natural or accidental causes; or whether, again, the difference is to be accounted for, as is done by Brocchi, by the greater power of resistance possessed by the ancient inhabitants, and arising from more robust constitutions, and better habits and customs, are points which, though interesting, cannot be enlarged upon here. Be it as it may, the reverse is now the case; for, as we approach the inhabited parts of the present city, through the space separating St. John of Lateran from the Forum and the Velabrum, we pass over the principal focus of the pestiferous exhalations. On the other hand, the surface of the Campus Martius, or even the whole valley, is free from this tainted atmosphere. The very section appropriated to the Jews—the Ghetto, where the precepts of public hygiene are sadly neglected—is comparatively healthy. The only exceptions to this freedom from the fever are to be found in the Velabrum, in the district of St. Peter, and on the surface extending from the river to the foot of the Janiculus—the latter of which seem, however, to derive their insalubrity from the miasmata exhaling from the soil of the ancient city, and which reach them with facility through the agency of the south winds.

On the bad air *(aria cattiva)* of Rome and its environs, a subject which has occupied the attention of many native and foreign physicians, from the days of Lancisi to our own,* Dr. C. enters somewhat fully in a separate chapter on the Pontine and the Tuscan marshes, and more briefly in that devoted to the city itself. Without going so far as Lancisi and his followers in regard to the nature of the cause of that bad air, he seems disposed to reject the theory of Folchi, Santarelli, and others, who refer the effects observed to the mere action of thermometrical and hygrometrical vicissitudes; and advocates the opinion of the agency of an organic matter variously combined with sulphuret salts, and promoting by its presence the decomposition of such of these as may be contained in the water, and the consequent evolution of the deleterious agent, which he supposes to be sulphuretted hydrogen. It may not be improper to remark, while on this subject, that the theory which ascribes fever to the morbid operation of this cause, and which had found advocates in Europe and this country long before our author thought proper to uphold it—Drs. Daniell,† Gardiner,‡ Melier,§ &c.—is supposed to derive support, so far at least as regards Rome, from the extensive exhalation of this gaseous fluid issuing from the soil. Such an exhalation is easily detected, if not everywhere about, at least in many parts of, the campagna and in the Pontine marshes. The odour by which it is characterised is rendered still more perceptible when the soil is, by any means, uncovered. This exhalation (as also that of carburetted hydrogen) has been noted by various investigators, and dwelt upon by resident physicians in their explanation of the causes of the diseases incident to the country. Dr. Gonel, who practiced for many years at Rome, lays particular stress on both in some valuable MS. notes furnished by him to Dr. Valentin,‖ and remarks that the olfactory nerves and respiration are often greatly incommoded by them.

The same observation has been made in the adjoining country, and finds a ready explanation in the circumstance that Rome is surrounded by extinguished volcanoes, and that the basin in which it stands was in all probability of like nature. Mr. Riccioli, who performed most of the experiments recorded by Brocchi in his excellent work on the soil of Rome,¶ confirmed, in conversation with the writer of the present article, all the conclusions to which that eminent author had arrived. They could never, it is true, detect any extraneous principles in the atmosphere of the insalubrious regions; and animal substances were not found to putrefy sooner in such regions than in damp localities situated within the healthy quarters of Rome. Yet, while averring these facts, which correspond closely with those observed elsewhere, Mr. Riccioli confirmed, to a certain extent, what Dr. Gonel stated to Dr. Valentin relative to the escape of gaseous fluids from the shores of the Tiber.

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* *Lancisi*, De nativis dague adventitiis Romani cœli qualitatibus. *Ib.* De noxiis paludum effluviis. *Doni*, De restituenda salubritada aeris Romani. *Cognati*, De Romani aeris salubritata. *Perri*, Ragionamento al popolo sulle cagioni delle morti improvvisa fraquentemente accadute in Roma. *Michel*, Recherches médico-topographiques sur Rome et l'Agro Romano. *De Matthais*, Ratio instituti clinici Romani in praefatione. *Brocchi*, Esperienze sull' aria cattiva dei contorni di Roma. *Folchi*, Considerazioni sopra un articolo Inglese riguardante un opinione particolare del Sig. Brocchi (Giornale Arcadico Gennajo, 1823). *Folchi*, Sulle origine delle febbri intermittenti in Roma e sue campagna. *Micara*, Della campagna Romana e del suo ristoramento. *Minzi*, Sopra le generi delle febbri intermittenti specialmente di Roma e della sua provincia australe. *Santarelli*, Richerche interno alla causa della febbre perniciosa dominante nello Stato Romano. *Thouvenel*, Traité sur le climat de l'Italie.

† London Med. Gaz. vol. xxviii. p. 669 (1841).

‡ Am. Journ. of Med. Sci. N. S. vol. v. p. 279.

§ Rapport sur les Marais Salans, Mém. de l'Académie de Méd. vol. xiii. p. 611, &c.

‖ Valentin, Voyage Médical, p. 98.

¶ Dello Stato Fisico del Suolo di Roma.

He collected, in 1818, large quantities of carburetted hydrogen, in various spots along the river, and found that it escaped from the edge of the latter, and even, in some places, as far out as twenty feet from the shore, but never from the dry land itself. The results of these experiments were subsequently published by Dr. Morrichini* (Professor of Chemistry at the Sapienza), who analyzed the air obtained.

M. Riccioli inclined to the belief that deleterious gases may escape from the soil by means of crevasses or other openings—natural or artificial—and that when mixed with the atmosphere they may, though producing febrile diseases, escape detection. But this he merely offered as a conjecture, and acknowledged that the experiments made by him, with a view to ascertain its correctness, had led to no satisfactory results. The same intelligent naturalist was, like many others, of opinion that cultivation would ultimately *cure* the country of the pestilence under which it now so severely suffers. We state these facts without laying much stress on them ourselves, so far as relates to the causation of fever; for, were this the proper place, it might be shown that neither carburetted nor sulphuretted hydrogen is adequate to the effect in question—existing in large quantities where fever is scarcely seen, and being absent in localities proverbial for their insalubrity.

The Pontine marshes have often been regarded as the source of the fever of Rome and its immediate environs. Dr. Carriere himself seems disposed to lean to this belief, or at least to think that they contribute, to some extent, to the production of that effect. For our part, we can discover no just reason for coinciding in that opinion. In the first place, it may be remarked that the marshes in question are separated from Rome by a chain of hills, on the south slope of which are situated the towns of Velletri, Genzano, and Albano, and the villages of Nemi and Arricia. These are all peopled by a robust and hardy race, little, if at all, subject to the morbific effects of the *aria cattiva*. Now, to suppose that the Pontine marshes extend their hurtful agency to the plain and suburb of Rome, we must admit also that, while such is the case, the exhalations issuing from them pass over the chain of hills in question, without injuring the inhabitants of these towns and villages, in order to exercise their baneful effects at a distance of several miles from the latter. Nor is this all. If we adopt the theory in question, we shall be called upon to explain how the *aria cattiva*, if it come from the Pontine marshes, happens to spare elevated spots in and about Rome—the Quirinal, for example; while it exercises a deadly action in low places—as the Villa Borghesi—situated in the same direction as, but beyond, the former, and which ought, were such theory correct, to be protected by them.

Neither can we suppose the fevers of Rome to arise from exhalations issuing from the marshes of Mecaresi, Porta, and Ostia. These are comparatively small, and at a distance of six leagues from the city, and, besides, separated from it by the wooded and cultivated hills of Monte Verde, as well as by the Janiculus and Vatican, which ought to prove a sufficient obstacle to the diffusion of the morbific cause, supposing it probable for the latter to be wafted from those localities. The other marshes of Pontano and Regillum, in an eastern and southern direction, are by far too small to be chargeable with the effect in question. In a northern direction, the environs of Storta, of Isola Farnese, and, indeed, all the Veientine territory, are sickly, though not under the influence of marshes or stagnant pools; and, if the disease can there prevail independently of such sources of exhalation, we can have no reason to deny that such may also be the case at Rome, and that in most of its districts where the fever appears it is evidently due to the action of local causes, and to the vicissitudes of temperature, aided, as exciting causes, by exposure to night-air, the action of dews, &c.

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* See letter to Brocchi in the Giornale Arcadico, vol. viii. p. 2.

Dr. C., like many others, regards Rome as one of the best medical stations of the peninsula for persons labouring under pulmonary tubercles. This moist atmosphere, he remarks, in which the humidity is never carried beyond proper limits, and in which the temperature—except at certain periods, the return of which may, from their regularity, be foreseen—never changes abruptly, has the effect of immediately ameliorating the irritation of the lungs. To this, however, he adds that the climate is not suitable to all periods of the disease. When prostration is not carried very far, it acts favourably, by calming and diminishing irritation; in the contrary case it acts as an additional cause to the existing prostration, and under its influence the remaining strength may diminish very rapidly. Sir J. Clark, in like manner, found it beneficial in the early, and injurious in the latter stage. Pure tubercular consumption is not of very frequent occurrence at Rome, the greater number of chronic pulmonary complaints being the effect of common inflammation. Acute inflammations of the lungs are frequent, violent, and rapid, and Dr. C. thinks that the climate favours the occurrence of hæmoptysis, which in the advanced stage of phthisis is, as is well known, a very unfavourable complication. The most proper time for having recourse to the Roman climate is about the close of winter or the opening of spring, or again, about the beginning of autumn, and especially during the magnificent month of October. What has been said of tubercular affections of the lungs applies equally to kindred diseases. When the irritation is connected with a fair degree of strength, the climate is beneficial; under contrary circumstances it is hurtful and must be avoided. It acts favourably in rheumatic diseases, in chronic affections of the skin, and in all complaints which call for a prolonged continuance of high temperature. It is also recommended in nervous disorders of the digestive organs. Dr. C.'s remarks accord with those of Professor De Matthais, Sir J. Clark, and others, as to the peculiar sensibility of the nervous system among the inhabitants of Rome, especially females; as evinced by a disposition to convulsions, and a morbid sensitiveness to perfumes; a peculiarity which could not have prevailed in the days of Horace, from whom, and from Plutarch, we gather that the Romans of old were fond of flowers. Indeed, the change must have been of comparatively recent date; for Pañorolo, who lived about the eighteenth century, recommended them, as well as musk and amber, to be placed in sick rooms for the purpose of purifying the air.

Pisa.—Few cities of the peninsula, as our author very properly remarks, enjoy a more ancient and well merited renown, in a medical point of view, than Pisa. This renown, far from diminishing, has increased in proportion as experience has disclosed the effects of the climate; and at the present day, there are few patients affected with tuberculization of the lungs who, after trial, do not attribute to it a more beneficial influence than to that of more southern or western localities. That this preference is, in the main, founded on the peculiarities of the climate, there cannot be a doubt; but we are disposed to attribute weight to the opinion of those who refer it, in part at least, to the influence of other causes. Etruria may justly be regarded as one of the finest regions of Italy; the environs of Florence are delicious; the valleys leading from the Etruscan capital to Pisa present a succession of tableaux full of charms and animation; the baths of Lucca and Pisa complete the attractions of this territory, to say nothing of the historical reminiscences it recalls, and the beauty of the monuments it contains.

Pisa, as a medical station, owes much to its geographical location, but more to the peculiarities of its topographical character. Situated at the entrance of the last valley of the Arno, the surface extending from it to the sea coast is, for the most part, flat, or devoid of important irregularities. The Arno divides the city from east to west, and in so doing forms a curve, the concavity of which faces the south. This portion of the river side, which by the Tuscans is denominated *Lung Arno*, monopolizes, in consequence of its situation and configuration, during the greater part of the day, the genial influences of the sun's rays, while it is open to the free action of the southerly winds, and sheltered from that of antagonistic currents. It is in consequence the spot selected by invalids, who there meet, in addition to a climate appropriate to their ailings, a degree of tranquillity contrasting greatly with the noisy bustle of Florence and other Italian cities; but which in many cases is essentially beneficial. The sky of Pisa is in perfect harmony with the tranquillity of the city, deprived, as it is, of the sparkling brilliancy of that of southern localities. Rain constitutes an essential characteristic of the climate, and, as such, has been mentioned by poets and historians. It does not fall as in Naples, and in the Roman Campagna, in heavy showers, but in a continuous manner, the quantity being distributed in such a way as to furnish a tolerably large proportion during even what may be called the dry season. The average annual amount is stated by some authorities to have reached above 46 inches, (1 metre 205 m.m.). Taking the annual average of three years, winter has been found to furnish 10.5 inches (255 m.m.); spring 9.1 inches (229); summer 7 inches (175); and winter 19 inches (475); presenting a total for the year of 45.4 (1134 m.m.). From this large amount, and frequent occurrence of rain, it may easily be foreseen that the hygrometer indicates ordinarily a very humid condition of the atmosphere, and seldom points to dryness, and that the barometer shows as seldom the existence of a strong pressure. Nor could it be otherwise. While Pisa is sheltered, in great measure, at least, from the action of northerly or dry winds, by a chain of high mountains, it is open to the southern influences. From this and other circumstances connected with the relative position of the sea and other watery surfaces, it must naturally follow that the atmosphere acquires great humidity; for the winds which predominate necessarily pass over those surfaces before reaching the city; the east and northeast along the valley of the Arno and the lakes of the southern part of the territory of Lucca; the southeast and south over the territory of Leghorn; and the southwest and west over the surface of the Mediterranean.

The mean temperature of winter is estimated at 45° (7.83 degrees Cent.); that of spring, 58° (14.82); summer, 74° (23.23); and that of the autumn, 63° (17.31); giving for the entire year a mean temperature of 60° (15.82). The latter is somewhat higher than the average of Rome, which, as we stated, is 59.5° (15.46); but the mean temperature of winter is somewhat higher in the latter city than at Pisa, as is proved, not only by the fact just stated, compared with the result obtained at Rome; but, also, by a comparison of the average minimum temperature in the two cities during that season. It is to be remarked, however, that though inferior to Rome in regard to the temperature of winter, the inferiority is not felt in every part of the city. It is so outside of the walls, and in those parts that are exposed to northern influences. In some other parts, and especially on the side of the river facing the south, and heated, during the greater part of the day, by the action of the sun, and which, in consequence, is selected as a place of residence by the sick, the thermometer rises several degrees higher than elsewhere, and gives, during winter, a mean temperature much superior to that of any part of Rome. But, if the climate of the latter city is, notwithstanding the occurrence in winter of cold winds, warmer in that season than that of Pisa, the latter, although relatively colder, is very mild, owing to the predominance of humidity, and the rare occurrence of cold and dry winds. Hence the prostration produced by the two climates is different, and must be referred to the action of different causes. In the one place, it is produced by an excess of humidity; in the other, by an excess of heat.

The mild climate of Pisa, according to our author, diminishes the exaltation of sensibility, and calms pulmonary irritation in certain forms of temperament. On individuals of a nervous temperament, it will act favourably; on those of a lymphatic temperament it will produce a contrary effect.

> "This quality of the air, which is efficacious in the first stage of phthisis, and perhaps in the commencement of the second, may become promptly fatal, if the disease has already undermined the powers of the system. In the midst of that silence which enervates by benumbing the faculties, and when under the influence of those causes which relax the fibres and destroy the vital activity, prostration makes rapid strides, and hastens the fatal issue."

This fact is admitted, according to Dr. C., by all the physicians of Pisa, and should be borne in mind by those who recommend a change of climate to phthisical patients. Under other circumstances, and in individuals of a nervous temperament, a different effect is obtained; irritability is calmed, pain is lulled, while the patient enjoys the bodily and mental repose so absolutely necessary for the amelioration or removal of the disease. But while the climate of Pisa produces beneficial effects in some stages of pulmonary consumption, and is, therefore, a suitable place of resort for invalids, Dr. C. remarks that it not unfrequently promotes hæmoptysis even in individuals who had not before experienced that symptom; an effect which he attributes not to any exciting quality in the atmosphere, but to its relaxing effect on the capillaries of the lungs arising from excess of humidity. These cases, however, are of comparatively rare occurrence; and he is of opinion that the complication thus produced may be advantageously combated by a recourse to sulphurous mineral waters. He does not approve of Pisa as a place of residence for such phthisical or other patients as labour under a depression of mind and despondency, and thinks that the quietness and silence of the place would increase this morbid condition, and tend thereby to aggravate the evil.

Before leaving this subject, it may not be uninteresting to remark that in latter times much has been done by the Tuscan government to drain, improve, and cultivate the marshy surfaces and maremmes which occupy so large a share of the surface of the country. The results, as regards salubrity, have been of the most favourable character. Fever and other complaints depending on miasmatic exhalations have greatly diminished in regions where they formerly prevailed to a very great extent. In 1840–1, for example, in a population of 103,343, the number of sick was 35,619, with a mortality of 1,316. In 1844–5, the population being 106,833, the sick lessened to 28,148, and the deaths to 986. During the intervening years, the improvement was progressive. As a necessary consequence of this improvement in the salubrity of those heretofore pestilential regions, as also of the favourable changes effected in the soil, the population has greatly increased. Thus, in a period of thirty years, from 1814 to 1843, the population of the province of Grosseto, which was 53,175, has reached the number of 76,179. It is somewhat curious that the increase in the maremmic provinces has been comparatively larger than in other districts of Tuscany. Thus, in the district of Florence, the increase has been 31 per cent.; in the territory of Pisa, 39⅓ per cent.; in that of Sienna 20¼ per cent.; in the Aretine territory 23½ per cent.; while, as we have seen, the increase in the province of Grosseto has not been less than 43½ per cent.

The opinion has long been entertained in England, in this country, and elsewhere, that the atmosphere of fenny or miasmatic countries exercises a favourable effect on pulmonary complaints. Originally maintained, nearly forty years ago, by Dr. Wells,* it has been subsequently adopted by some of our own writers, and by Dr. Boudin† and others in France, and acquiesced in by the author of the volume before us, who adduces some important facts in its support. Judging, indeed, from the statements he makes on the subject, we may conclude that the antagonistic influence in question, which the reader need not be told, so far from being generally acknowledged, has, by high authorities, been positively contraverted, might be illustrated from the results obtained in various parts of the peninsula, and more particularly in the maremmic districts of Tuscany. We have seen that the climate of Naples, where intermittents are rare, is inimical to tubercular phthisis, and favours its development. Admitting, with Dr. De Renzi,‡ that the number of deaths from this disease occurring in that city amounts to one in 12 of the whole mortality, and not to one in 2½, as maintained by other authorities§—a proportion larger than that obtained in London and Paris (one in 5 and one in 3½)—we find, on examination, that this mortality, though thus greatly reduced, is still infinitely greater than that occurring in the marshy districts situated on the south side of Naples, as well as in the environs of Puzzuolo and Baia, which are paludal, in Rome and its campagna, in Pisa and in its vicinity, at Nice and other places equally within reach of miasmatic exhalations, and possessing a climate little favourable to the development of phthisis. In the Tuscan maremmes, during the year 1840, the number of cases of that disease was only 25 in 26,786 cases of disease. In 1841–2 phthisis presented a proportion of 27 in 28,138 cases; and the next year the proportion was 48 in 26,807. Thus out of a total of 81,731 cases of sickness, there were 100 cases of phthisis, or one in 817. From this we may perceive that the disease is there of very unfrequent occurrence, and that hence our author is justified in recommending the Tuscan maremmes as a favourable place of sojourn for phthisical patients.

The extent to which these remarks on the climate of Italy generally, and of Naples, Rome, and Pisa in particular, have reached, leaves us no room for examining the condition and medical influences of other parts of the peninsula. All we can do is to say, in a few words, that our author regards the climate of Sienna as useful in scrofulous affections, but hurtful in phthisis. He thinks that of Florence may also be advantageous in scrofulous diseases, characterized by inertia of the system at large, in some form of atonic paralysis, in melancholy, &c., but that it must be avoided by the phthisical. Venice is favourable to the development of nervous complaints; but febrile diseases, which are very common along the Lido and the continental shore, are unknown in the city. The climate acts favourably in phthisis and other affections of the lungs, being mild and exempt from sudden transitions. But, like that of Pisa, it is only useful in the early stage of the disease. The atmosphere of Menton and its vicinity is useful in the same complaints. It is mild, without excess of humidity; warm but not hot, and free from sudden thermometric and hydrometric vicissitudes. In cases of the disease occurring in scrofulous temperaments, the climate of that little place is preferable to that of Pisa, from a less degree of humidity. The climate of Monaco, on the contrary, is unfavourable in phthisis, but useful in chronic irritations, nervous or inflammatory, of the intestinal canal. That of Villefranche approaches in its remedial influences to that of Menton. Of Nice, which would deserve a more ample investigation than can be bestowed upon it on this occasion, we can only say that its climate differs considerably from that of Pisa, and even of nearer localities, in being less impregnated with humidity, and presenting a greater contrast in the thermometrical condition of the day and night. So far as relates to phthisis, it is, however, more favourable in that form of the disease which occurs in scrofulous temperaments, and calls not only for a mild, but also for a tonic atmosphere. Like Sir James Clark, our author is of opinion, that from a residence at Nice very salutary effects are produced in chronic bronchial diseases. Such patients, says Sir James, generally pass the winter with little comparative suffering from their complaint, and with benefit to their general health. They are here able to work in the open air, whereas if they had remained in England (or other colder latitudes) they would in all probability have been confined during the greater part of the winter to the house. The particular kind of bronchial disease most benefited by a residence at Nice, is that accompanied with copious expectoration, whether with asthma (humoral asthma) or otherwise, and in the chronic catarrh of aged people it is particularly beneficial. R. La R.

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* Trans. of Soc. for Improving Med. and Chirurg. Knowledge, vol. iii. p. 471, 1812.

† Etudes de Géologie Médicale sur la Phthisie, &c., Paris, 1845, p. 76.

‡ Traité des Fièvres Intermittentes, Remittentes, &c., Paris, 1842, pp. 72–5, &c.

§ Recherches Statistiques sur la Phthisie en Italie, Bul. de l'Ac. de Méd. 3, p. 542.

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*On the Threatenings of Apoplexy and Paralysis; Inorganic Epilepsy; Spinal Syncope; Hidden Seizures; the Resultant Mania; etc.* By MARSHALL HALL, M.D., F.R.S.L. and E. etc. etc. London, 1851: 8vo. pp. 90.

THE remarks of Dr. Hall on the important subjects treated of in the volume before us comprise the substance of the Croonian Lectures delivered by him at the Royal College of Physicians, in March, 1851. They are replete throughout with the deepest interest, and if their correctness shall be established by future observations, they remove at once all the obscurity in which the true pathology of apoplexy, paralysis, epilepsy, and other allied affections has heretofore been involved, and point out the true principles on which must be based all the means for the prevention of the attacks of these diseases—diseases in which, as the author correctly remarks, prevention is the all-important object of the physician. When a premonitory seizure has once occurred, it is so apt to recur, the susceptibility to recurrence is so difficult to remove, the effects of attacks are so dire, whether we regard mind or limb, that the *one object* of the patient and of the physician must be to watch the dawn, as it were, of the malady, and adopt with energy and perseverance every means of obviating such a calamity as a first or second seizure.

"The physician," Dr. Hall remarks, "is frequently summoned to cases in which, with or without an actual seizure, there is the *threatening* of an attack of apoplexy, of paralysis, of epilepsy, or of syncope. It is to these *threatenings*, to these *minæ*, according to the expression of Heberden, affections which equally alarm the patient, the patient's friends, and the physician, that I beg to call your serious attention.

"On the occasion of excitement or emotion, or of gastric irritation, or in the midst of the most usual occupations, the patient is seized with vertigo, or a momentary oblivium or delirium, or various affections of the senses, or loss of muscular power, especially of the speech, of the hand, or of one side, and flushes or turns pale, with intense alarm for fear of an apoplectic or paralytic seizure; or the eyes and head may become suddenly fixed, the pupils dilated, the countenance flushed, with obvious loss of consciousness, and there is the threatening of epilepsy.

"These *minæ* may last for a minute or two, and subside. But the patient is evidently in danger of a 'fit,' or seizure, and that of an apoplectic, paralytic, epileptic, or syncopal character; or such a seizure may actually take place.

"What are the hidden springs of action which have been called into play in these various circumstances? What is the rationale, what the modes and means of prevention?

"Some of these affections are of the slightest kind—'Nihil aliud æger sentit præter oblivium quodam et delirium adeo breve, ut ferè ad se redeat, priusquam ad adstantibus animadvatatur.' It is their obvious and fearful *tendency* which gives them importance.

"I have known mere *blushing* to become intense, constantly recurrent on every slight occasion, and attended by varied mental distress, and even to pass into an epileptoid affection; just as we have all known the flush of anger or indignation to pass into apoplexy. Mere 'sick-headache' sometimes passes into an affection of a far more formidable character. One patient experienced a sense of 'tightness' about the throat, with flushing, and the dread, and danger too, of some seizure, after taking indigestible food.

"In one gentleman, sudden attacks of loss of speech, or of the power of the hand to write, took place from time to time, at varied and rather distant intervals, for ten or twelve years, leaving, at length, permanent inability to speak distinctly, or to retain the saliva perfectly, and a degree of paralytic weakness of one side. Ultimately, an attack was attended by a degree of stupor and stertor; he was 'quite unconscious to what was passing around him for ten or fifteen minutes, with loud snoring breathing, and then imperfectly conscious; and again, the next day, the mind seemed to wander at intervals, becoming, however, afterwards perfectly clear and composed.' Epilepsy itself could not be more paroxysmal.

"Another gentleman became liable to attacks of loss of the power of articulation, so that he was compelled to *point* to the objects he required. At one time he was seized with loss of the power of writing; at another, with transient hemiplegia. At length, the inability to write occurred from the mere flurry occasioned by the loss of his spectacles at a moment when it was his duty to sign some official papers. The next day he threw up his office, and, a day or two afterwards, he committed suicide.

"These are examples of what I have ventured to designate *paroxysmal* apoplectic and paralytic affections. Of epilepsy, as a paroxysmal affection, I need not now speak. But sometimes these seizures, instead of being apoplectic, or paralytic, or epileptoid, are *syncopal* in their external form and character. With or without previous flushing, the patient may become pale and faint, and exclaim, 'I am dying.'

"In some instances, again, these seizures take place *unobserved*, in the night, or in the absence of friends; and the effects and results of such *hidden* seizures are of the most puzzling character, until the occurrence of those seizures is detected, or at least suspected. These effects may be—a degree of stupor, of loss of memory, or of delirium; or actual *mania*, or amentia!"

In proceeding to consider the cause of simple apoplexy, or that resulting from congestion of the blood-vessels of the brain, Dr. Hall remarks that he hopes to show that the idea of "tendency" or "determination" of blood *to* the head is a mere fiction; that whatever the violence of the *arterial* circulation, there is no danger of over-distension of the encephalic vessels, so long as there exists no impediment to the return of blood along the veins. In apoplexy and kindred diseases this impeded return of blood from the head, according to Dr. H., is induced by a *spasmodic* action of the *muscles* of the neck on the veins of that region—an action evident in a vast many instances, though latent, perhaps, and to be inferred from the similarity of its effects, in others.

"To these conditions of the muscles of the neck, I venture," he remarks, "to give the designation of *trachelismus* (from τραχηλον, the neck). Its effects on the veins may be termed *phlebismus*. It is frequently to be *felt*, when it is not to be *seen*, on applying the finger. It is still more frequently to be traced and inferred by observing the *lividity* and *tumidity* of the integuments of the face and neck."

"Simple apoplexy, simple paralysis, not less than epilepsy and spinal syncope, may occur, recede, and recur, promptly, repeatedly, at varied intervals. Trachelismus, with its effect, phlebismus, is, indeed, to paroxysmal apoplexy and paralysis, what laryngismus is to epilepsy. Both are equally spasmodic, and subject to the laws of spasmodic affection.

"In the first instance, the remission or recovery from these seizures may be perfect. Afterwards, some permanent effect remains, and there may be a degree of inarticulateness of speech, a little tendency to the flow of saliva over the lip, or a little debility in the movements of an extremity; or the mental faculties, the power of attention, of apprehension, of memory, may be somewhat impaired, and nothing more.

"These effects are equally the result of apoplectic or of epileptic seizures, though more speedily of the former than of the latter.

"The causes, too, of these two forms of disease of the nervous system are the same—and chiefly, mental emotion and gastric irritation. The difference appears to be that in one case the cerebrum, in the other the medulla oblongata, is principally affected. This result may depend on the different susceptibilities of these different portions of the nervous system, or on the different channel through which the cause may operate in different individuals.

"In a third instance, that modification of action obtains, which leads to ghastly pallor and apparent syncope, frequently with sickness. Indeed, this sickness frequently plays an important part in paroxysmal diseases, occurring, as it does, in its slightest form of 'sick-headache,' or of what may be termed 'sick giddiness,' or in the form, or in the course of an apoplectic seizure."

Dr. Hall next proceeds to show the dependence of the lividity of the countenance, either with flushing and turgescence of the face and neck, or with pallor, which, after their paroxysmal form, is the most characteristic phenomenon of these seizures, upon impeded venous circulation. This same lividity and tumidity of the face and neck is frequently produced by mental emotion, gastric irritation, &c., and, in these instances, Dr. Hall maintains that they depend upon impeded return of venous blood and its inevitable effect, the distension of the blood-vessels placed immediately between the last branches of the arteries and the first roots of the veins, and of the latter vessels themselves; the result of trachelismus, or contraction of the muscles of the neck. He instances the popular expression—'choked with grief or with anger'—and instances the blush of shame and the deep flush of anger. Mere intense blushing, he remarks, he has distinctly traced into epilepsy, and the still more intense flush of anger has passed into apoplexy. With both the blush of shame and the flush of anger, there are frequently, and in proportion to their degree, a purple lividity of the face and neck, and even of the upper part of the thorax. Dr. H. has seen the same flush of the countenance, whilst the patient has *felt* a degree of stricture of the throat with the fear of some seizure, as the effects of an indigestible meal.

"The emotion of disgust, and gastric irritation, frequently issue in actual sickness and vomiting, involving closure of the larynx, or laryngismus, a partial trachelismus.

"In epilepsy, the state of the neck is obvious to the eye; the head is fixed, there is torticollis; and there is the '*facies nigrescens*' of Heberden. In the threatening of apoplexy, there is the same livid or purpurescent hue of the face, and the same paroxysmal character. Is it possible to doubt that, what is evident in the former affection, exists, though in a latent form, in the latter—the *effects* and the recurrent character of the affection being the same?"

In all these cases, Dr. H. believes that trachelismus intervenes as the connecting medium between the cause and its effects. The evidences of the occurrence of trachelismus in apoplexy are, the occasional *sensation* of strangulation, the purpurescence and turgescence of the face and neck, the loss of consciousness, &c., and the sudden accessions and recessions, or the paroxysmal form, of the affection.

"This trachelismus," he remarks, "probably occurs in the more deeply-seated muscles of the neck, and, according to the *degrees* or *kind* of impeded venous circulation, may lead to further *cerebral* or *spinal* symptoms; whilst the external evidence of its operation in the condition of the face and neck, varies from similar causes."

Dr. H. thinks it probable that the *first* stage of trachelismus is always *latent;* being *inferred* from the turgescence of the face and neck. The *second* is inferred from *cerebral* symptoms in some cases, and from *spinal* symptoms in others.

"It is an important question," Dr. H. observes, "how far the action of the muscles of the neck may be specific in different instances. Are the various phenomena of external blushing, or flushing, of the apoplectic seizure, and of the epileptic attack, the varied effect of the compression of the external and internal jugular, and of the vertebral veins respectively? These questions must, I think, be answered in the affirmative. But, the satisfactory *proofs* of these facts may still be wanting. The act of sickness, the effect of emotion, or of gastric irritation, is, however, perfectly specific and distinct.

"That action of the muscles designated *expression* takes place in the *neck* not less than in the face; and it is thus the first stage of trachelismus, as the blush of shame, and the flush of anger are the first shades of phlebismus, and, if I may venture to say so, of paroxysmal nervous affection."

Dr. H. believes that trachelismus and phlebismus take place during sleep—inducing slight turgescence of the countenance, vivid suffusion of the eyes, and a sub-apoplectic state of the cerebrum and medulla oblongata. It is, he adds, a slight trachelismus, and frequently concurs with other causes in inducing the apoplectic and epileptic seizure.

The effect of a tight collar or cravat is next noticed—and its tendency under certain circumstances to induce an attack of apoplexy.

"The influence," says Dr. H., "of a tight collar or cravat is not duly appreciated. It may be slight in a state of repose, but on moving the head variously, the muscles of the neck expand: this expansion cannot take place *outwardly;* it, therefore, takes place *inwardly*, and so compresses the subjacent veins. It is on this principle, not, I think, generally acknowledged, that a moderately tight cravat may prove an unsuspected source of danger. Under the influence of such a cravat or collar, the not unusual action of the muscles of the neck becomes a sort of trachelismus, perhaps more frequently than is imagined. The cravat, too, which is not tight generally, may become so under the influence of sleep, of emotion, or of gastric repletion."

In reference to some phenomena which occurred in the case of a girl, affected with aphonia, to whose larynx galvanism was daily applied, Dr. H. remarks:—

"In these facts we have the *proof* that a slight degree of contraction of the muscles of the neck, induced by the electric current, induces, in its turn, heightened colour of the face, of a florid hue; and that a greater degree of that contraction induces a deeper colour of the face; the lips, and angles of the mouth being livid, and the eyes suffused, with confusion of thought, headache, dimness of sight, alternating with flashes of light; these latter remaining for a few minutes after the cessation of the current, and then disappearing. They present the *demonstration* of the nature both of trachelismus and of phlebismus, and of their effects."

"Instead of flushing and turgescence of the face and neck, we very frequently observe pallor, with or without sickness and faintness, in cases of seizure." "It is a case to be most carefully distinguished from ordinary syncope from sources of exhaustion, diseases of the heart, &c.; and I propose to characterize it by the term *Spinal Syncope.*"

In these cases, the pallor is attended with ghastly lividity, both probably, Dr. H. thinks, being the immediate effects of trachelismus on the vertebral veins, inducing *irregularity* of circulation in the medulla oblongata. Faintness, sickness, and vomiting, he adds, frequently ensue.

"The event may be compared with what is experienced by some persons from the movement of a carriage or a swing, and by almost all from that of a vessel on a rough sea. Irregular impulses of the blood on the medulla oblongata induce the effect of shock on the heart, and of irritation on the muscles of expiration combined in the act of vomiting. In the cases to which I have alluded, the cutaneous pores are frequently relaxed, and a cold perspiration bedews the patient's surface. There is frequently, in this case, as well as in that of suffusion of the countenance, loss of consciousness, and the fear of falling, or actual falling."

"Sickness is sometimes associated with headache, thus constituting 'sick-headache,' sometimes with giddiness. It is frequently an effect of the emotion of disgust; sometimes of a fall on the head; sometimes of an apoplectic seizure."

We must be indulged in one or two long quotations from the present work—as we can in no other way present to our readers a fair exposition of the views of Dr. H. in reference to the diseased conditions of which it treats. These views are advanced in so condensed a manner—almost in a series of aphorisms—that any attempt at analysis is out of the question—what we give must be in the author's own language. We believe that our readers would readily pardon even more extended quotations, in consequence of the importance of the subjects discussed, and the highly interesting pathological views advanced by Dr. Hall.

His explanation of those cases of apoplexy which are attended with softening of the brain is as follows:—

"In all cases of the apoplectoid or epileptoid seizure, whether hidden or observed, the cerebrum is congested, the intervening links being trachelismus and phlebismus. If the congestion be extreme, and greater in one hemisphere than the other, hemiplegic paralysis is observed. If the cerebral affection be limited to *congestion*, and if this congestion disappear, the paralysis disappears too. It is paroxysmal and transitory. But if this congestion leads to ecchymosis, as we see in the face, this cannot subside; *softening* is the result; and with this, a greater or less degree of permanent hemiplegia. Or there may be effusion of serum into the ventricles, and its consequences, loss of memory, &c. If, with the paralysis, there be spasms—if it be *spasmo-paralysis*—the medulla oblongata is *irritated* by pressure or counter-pressure from the tumefied cerebrum."

In relation to the diagnosis between paroxysmal and other attacks of apoplexy, Dr. H. remarks:—

"Hitherto, I think, the distinction between the different attacks of apoplectic character has only been one of *degree*. But I believe there is an essential difference between the *threatenings* of apoplexy which occur and recede paroxysmally, and even the slightest inroads made by organic disease, whether of the arteries, or veins, or membranes, or the substance of the encephalon. Whilst the former are repeated, at first leaving little or no ill effect behind, the latter proceed insidiously, and at last there is perhaps a crushing attack of pain, of pallor, and of apoplexy, or of hemiplegia—a large laceration of the substance of the brain and extravasation of blood being discovered on making a *post-mortem* examination.

"It must be borne in mind, that a first attack may assume the form of paroxysmal apoplexy, the patient recovering speedily and entirely; and yet the second may be of the most deplorable character. In the former case, there are generally turgescence of the face and neck—the effect of trachelismus; in the latter, there is pallor—the effect of shock."

In speaking of the difference of treatment of paroxysmal nervous affections and similar diseases of organic origin, Dr. H. remarks that, while in a violent attack of apoplexy or palsy, the administration of an emetic would more than probably have the effect of causing greater congestion or greater effusion of blood, yet, if the case be one of paroxysmal apoplexy or paralysis, the nausea and sickness induced by a mild emetic would probably dissolve the spasm on the muscles of the neck, and so remove the pressure upon the veins by which the return of blood from the head is impeded, and consequently the congestion of the encephalon.

We quote from the preface of our author the following remarks on the treatment of apoplectoid seizures—

"No premonitory sign should be neglected, however apparently slight. A flush, a sense of constriction about the throat, a momentary vertigo, a momentary loss of feeling or of power about the lips or the fingers, should strike us with such terror as may, at least, awaken our utmost attention. The best physician is he who *watches* his patient most carefully. The wisest patient is he who submits—*for the rest of his life* it may be—to his physician's injunctions; asking not, 'how little may I do?' but, 'how much can I do?' in my perilous case.

"The regulation of the ingesta and of the egesta, of the occupations and emotions of the mind, of the exercises of the body, of the sleep, especially of the posture during sleep, of the circulation in the head and in the hands and feet—these, and many others are topics never more to be forgotten by the threatened patient.

"It is not mere *doses* of medicine, which may indeed ward off an attack for the moment, but mild, yet efficient, *courses* of medicine, to which we must trust.

"The *emotions* and the *irritations* are so frequently associated with undue secretion of gastric acid, that I cannot sufficiently recommend the due administration of antacids. With these, stomachic aperients, alterative mercurials, frequently gentle tonics, and especially, I think, the spinal tonic, strychnia, and every plan for the improvement of the general health—the shower-bath, change of air and scene, but especially travelling—must be combined. The physician and the patient should be prepared for the recurrence of the threatening, or of the actual seizure—and provided with the due and energetic means, and instant remedies proper for the emergency. In a word, the strictest regimen must be enjoined, with the view of prevention, and the promptest remedies, in the case of threatening or of seizure."

The foregoing relates to the proper management of those *threatened* with an attack of apoplexy or paralysis. The following is the plan of treatment laid down by Dr. H. when an attack has actually occurred.

“In the decided paroxysmal seizure, our practice may be, and ought to be, energetic. We should promptly take away blood, and we should induce sickness and vomiting. If the attack be slight and repeated, an antacid aperient draught, properly repeated, may be all that is immediately required. If it be severer, an emetic with an antacid should be first given, and then an antacid aperient. If severer still, blood-letting, by cupping or by venesection, must be premised.

“In the midst of these measures, the head should be raised, a cold lotion applied to the crown of the head, sinapisms behind the ears, and to the nucha, and fomentations of the feet, and an enema should be administered. Afterwards, the tenth part of a grain of the chloride of mercury, two grains and a half of the pilula hydrargyri, and half a grain of squill and of ipecacuanha, should be given thrice a day.

“But, in organic apoplexy or paralysis, it may be a question whether we should take blood; but there can be no question in regard to the administration of emetics. The propriety of blood-letting and its measure must depend upon the state of the pulse and of the patient generally. The condition of the pulse must be ascertained as the blood flows. Sometimes its strength improves, and then we venture to proceed. On having taken what is deemed the due quantity of blood from the arm, we may prescribe cupping behind the ears or at the nucha.

“Emetics ought, I believe, and for the reasons already stated, to be avoided. The other remedies are those which have been already noticed as proper in the other form of apoplexy or paralysis. The cupping instrument applied to the nucha, making crossed incisions, but taking away very little blood, presents us with a very efficacious mode of counter-irritation.”

The relation between apoplexy, paralysis, epilepsy, and mania is shown, according to Dr. H., by the patient affected with paroxysmal apoplexy sometimes becoming epileptic; by the attacks of the epileptic sometimes gradually assuming a more apoplectic character; by the fit of apoplexy being sometimes attended with convulsion, and by the usual termination of the fit of epilepsy in an apoplectic stupor, and this sometimes in mania.

“Both the apoplectic and the epileptic seizure are equally prone to issue in hemiplegic paralysis. This event is both more frequent and more apt to be permanent in the former case than in the latter; and, I believe, for this reason: the cerebrum is more congested in apoplexy than in epilepsy, though it *is* affected in both. Epilepsy is more apt to become complicated with spasmo-paralysis than apoplexy, for a similar reason: the medulla oblongata is more affected in the former disease than in the latter. The apoplectic, and especially the epileptic seizure is apt to pass into stupor or mania; and in the case of *hidden* seizure, it may be difficult to form an accurate judgment of the nature of these events.”

“Every fact leads to the inevitable conclusion that the apoplectic, paralytic, epileptic, and maniacal affections are allied intimately together.

“The same remarks relate to puerperal cases: convulsion, apoplexy, paralysis, mania, are so linked together, that they may not only occur singly, but in various succession, before, during, or after parturition. The difference is, in reality, but the difference of vein principally compressed.”

Dr. H. considers that form of apoplexy or paralysis which arises from emotion, or irritation, as primarily *inorganic;* and of course that form which arises from disease existing within the encephalon, and especially from rupture of the substance of the brain, as *organic.*

“The former of these is characterized by varied flushing of the countenance, and perhaps of the neck, and by various symptoms, such as headache, vertigo, loss of consciousness; loss of the power of speech, or of the hand; or more decided apoplexy or hemiplegia. Of this kind of attack there is every variety, every degree, every duration, from the most transitory to the permanent; every kind of recurrence and remission. It may be slight and transitory, and recurrent during many years. It may prove fatal, even in many of its attacks, early or late.”

“Paroxysmal cerebral seizure is for the most part distinguished by the flushing of the countenance, the recurrent form of the seizures, the partial nature of them, &c. &c., whether they be apoplectic or paralytic, and the absence of *severe* pain of the head.

“The organic cerebral seizure is generally denoted by pallor of the countenance, faintness, sickness, sometimes with *severe pain of the head.* This kind of attack is generally severe, and the apoplexy and the paralysis are comparatively little under the control of remedies.

“In the paroxysmal seizure there is little of the appearance of *shock;* in the organic, the shock is frequently extreme, and traced in the condition of the countenance, the general surface, the pulse, &c.”

Dr. H. remarks that the epileptoid or epileptic seizure is still more distinctly characterized by trachelismus than the apoplectoid or apoplectic. In some cases the whole attack consists in a fixed state of the head and eye, dilated pupil, and a deep flush; in others, there is unusual flushing of the face, with suffusion of the eye or eyelid, as the forerunner of the decided epileptic seizure.

“The first stage or first degree of both apoplexy and epilepsy,” he remarks, “consists then in trachelismus—a spasmodic or spinal action, manifested in its effects on the venous circulation of the countenance and of the encephalon. The second stage or degree of these maladies is augmented cerebral affection in the former, of spinal affection in the latter; the difference consisting in the different forms assumed by the trachelismus, or of the muscles contracted, and of the veins compressed and obstructed. If these muscles are those which compress the jugular, the case is apoplexy; and if they are those which compress the vertebrals, and close the larynx, it is epilepsy! At least, I have not been able to resist the train of thought which has forced itself upon me, and which I lay before you with the utmost frankness, trusting to you to give it your most candid consideration.

“Both paroxysmal apoplexy and epilepsy are, then, first *spinal* or spasmodic, only in different degree and extent; both become *cerebral,* both leading to *coma* and, it may be, to *paralysis;* both terminating, occasionally, in *mania* or *amentia.*”

We quote the following remarks of Dr. H. on spasmo-paralysis and its diagnosis:—

“The *attack* of apoplexy or hemiplegia is sometimes complicated with convulsion or spasm; the attack of epilepsy or convulsion sometimes leaves paralysis. These two cases of spasmo-paralysis require to be accurately distinguished from those of pure spasm and pure paralysis. The former of these is, of course, spinal; the latter may be either purely cerebral or purely spinal. When the spasmo-paralysis is distinctly *hemiplegic,* I think it always involves both the cerebrum and the spinal centre.

“When hemiplegia is complicated with convulsion or spasm, either in the attack or afterwards, the cause of the hemiplegia—generally softening or rupture of the opposite hemisphere—is either complicated with such *tumefaction* as to affect the medulla oblongata by pressure or counter-pressure, or with arachnitis, with effusion at the base of the brain, affecting the medulla oblongata. In one deeply interesting case of this kind, the hemiplegia presented an exception to the general rule of augmented irritability in the paralytic limb. Whether this fact will be found in other cases of this kind, I do not yet know. But if it should, it will at once indicate a peculiarity in the pathology; for the paralysis must be more or less spinal, and suggest the diagnosis. This last question applies to the case of paralysis left by the convulsive or epileptic seizure. Is it *spinal?* Is it attended by diminished irritability of the muscular fibre?”

“The hemiplegia observed after the epileptic or convulsive seizure is sometimes entirely dissipated. In one case this event occurred after repeated seizures, the hemiplegia being rapidly evanescent in each. In another case, the hemiplegia, after severe epileptic or convulsive seizures, seemed, like those seizures themselves, of the most hopeless kind; yet it disappeared so entirely, that the patient, a seal engraver, has recovered the perfect use of his fingers, as of the arm and leg. The questions are—whether there be mere irritations or organic change? whether there be mere intra-vascular, or extra-vascular derangement?

"These two forms of spasmo-paralysis are strictly connected with the subject of these lectures—paroxysmal seizures. But there are others which belong to a more extended view of the subject, to which I can, of course, only advert in a few words:—

"First, chronic hemiplegia is apt to become complicated with spasm, the effect of *tone*, the acts of volition being suspended. This is generally seen in the closed and rigid hand, and in the arms. Secondly, spasmo-paralysis is apt to supervene in chronic cases of paralysis agitans; and, in this case, strange to say, I think it is the effect of a sustained act of volition, of which the patient is unconscious. It ceases, on certain occasions, when the attention is drawn to another object."

We must pass over the highly interesting remarks of Dr. H. on the subject of "hidden seizures"—a subject certainly of very great importance, as well in a medical as in a lego-medical point of view. It would, however, extend this article to too great a length to present our readers with a fair exposition of the author's views in respect to it. We shall conclude our notice of Dr. H.'s work by an extract from his section on "Paroxysmal Mania."

"I have known a maniacal paroxysm to follow an epileptic attack. I have just described a case in which a violent maniacal paroxysm followed what afterwards appeared to have been a *hidden seizure*. I have had occasion to watch a case in which a paroxysm of mania came on at uncertain intervals, after a prolonged and perfect 'lucid interval,' and was superseded by the well-timed administration of emetics. May we not infer from these facts that mania is frequently a paroxysmal disease, holding the place, in regard to other cases of mania, which paroxysmal apoplexy does to organic apoplexy? and does not this view suggest the propriety of the repeated administration of emetics in such cases of mania?

"The paroxysm may be excited, like that of paroxysmal apoplexy and inorganic epilepsy, by emotion or gastric irritation. Some source of exasperation may have occurred, or some improper article or quantity of food may have been taken, or gradual load of the stomach or bowels may have taken place—may have proved the source of trachelismus, and this of a hidden seizure, and this in its turn of mania. The mind must be kept tranquil, the diet must be of the most digestible kind, and the bowels must be kept well moved daily; in addition to which, an emetic should be given at stated intervals, or on the occurrence of any symptoms threatening an attack.

"Some cases of mania assume decidedly the paroxysmal form, subsiding entirely in their 'lucid intervals;' others continue without absolute intermission, but experience paroxysmal exacerbations. In some cases these paroxysms have been distinctly traced to intemperance in diet. In the case to which I have alluded, the attack, which had usually returned after the space of four or six weeks, has been warded off by weekly emetics for sixteen weeks! These emetics consisted of two grains of the tartrate of antimony, mingled with the patient's tea, unknown to him, when he had been observed to commit an error in his diet.

"It will be remembered that mania is apt to follow an apoplectic, paralytic, epileptic, or convulsive affection; and I need scarcely again advert to the case of hidden seizure just detailed. Mania forms one of the *class* of paroxysmal, cerebral, and spinal diseases. It may arise from mere vascular distension, the effect of such a seizure.

"In paroxysmal mania, as in paroxysmal epilepsy, I am persuaded that there is the same pathology in trachelismus, and the same hope of successful treatment from emetics, or from emetics, antacid aperients, and mild alterative mercurials combined. I am persuaded, too, that this form of mania, at least, admits of remedy more frequently than is supposed; and we have still to discover the rationale of other forms of insanity.

"These cursory remarks must be viewed as merely suggestive. The subject must be carefully investigated. But I have long meditated the institution of an asylum appropriated to cases of short duration, the stay of which within its walls should be duly limited. Each of these limited periods might be *one year*."

We here close our notice of the work of Dr. Hall. From the extracts we have given, our readers will be able to form a judgment of the views advanced by the author in reference to the immediate cause of what he terms the paroxysmal form of apoplexy, paralysis, epilepsy, and spinal synocope; the indications of a threatened attack of these diseases, with the means of prevention, deduced by him from their pathology in what he has denominated trachelismus and phlebismus. Of the accuracy of the pathological and therapeutical views of Dr. H., we do not feel ourselves competent to give a correct judgment until we shall have had an opportunity of testing them by a series of clinical observations. Many of the facts referred to by him in defence of those views, we are familiar with, and have little doubt that the leading doctrines advocated in the volume before us will be found to be based in truth. The work of Dr. H. is deserving of an attentive study on the part of every practitioner, who will, no doubt, look with pleasure to the speedy appearance of the promised systematic exposition of what is here treated only *in limine.* D. F. C.

ART. XV.—*Essays and Notes on the Physiology and Diseases of Women, and on Practical Midwifery.* By JOHN ROBERTON, formerly Senior Surgeon in Ordinary to the Manchester and Salford Lying-in Hospital and Dispensary for the Diseases of Women and Children. London, 1851: 8vo. pp. 530.

THE essays and notes of which this volume consists are the fruit of the author's inquiries and experience during eleven years' connection with the Lying-in Hospital and Dispensary for the Diseases of Women and Children at Manchester, as well as subsequently to his retirement from that institution. The subjects of which they treat are such as deeply to interest every medical man; while the general deductions and practical inferences of the author are throughout replete with instruction.

Mr. Roberton is evidently a close and industrious observer—little inclined to adopt opinions upon the mere score of authority, or to shrink from the task of testing the truth of generally received doctrines in consequence of the labour required to collect and compare the requisite facts.

The initial essay, on the period of female puberty in different climates, in which the author has very successfully refuted more than one error in the opinions almost universally entertained by physiologists on this important point, presents a very fair specimen of his industry in the accumulation of accurate information from every available source calculated to elucidate the subject of investigation.

In this essay Mr. Roberton presents a number of interesting facts in relation to the present social condition of woman in countries where the Christian religion has not yet elevated her to her proper rank and position in domestic life and in society generally, and a large and valuable mass of information bearing more directly upon its immediate object—the determination of the influence of climate upon the age of puberty.

A mere analysis of the essay, or even repeated and extended quotations from its different sections, would not present a fair exposition of the amount and value of the evidence adduced in support of the author's general conclusion, that difference of climate alone occasions very little, if any, important diversity as to the periods of life and the physical changes to which the human constitution is subject; and that, in all these particulars, mankind, in each of the races and under every climate, is placed by nature on an equal footing.

It has been almost universally believed, since the time of Haller, that in the females of cold climates the period of puberty occurs late in life, while in those of tropical regions it occurs very early; girls being marriageable and actually becoming mothers in Hindostan at an age when they are still in their childhood in England and more northern regions. This Mr. Roberton has shown not to be the case. He presents three tables, the first presenting a comparative view of the age of female puberty in 597 natives of Hindostan and 2,169 natives of England: the second, the comparative ages at the birth of their first child in an equal number, 265, females of the two countries; and the third, the comparative ages at the cessation of the catamenia in 57 Hindostan and in 69 English females.

"The inferences I would draw," Mr. R. remarks, "from this tabular view of the ages for the commencement and the cessation of the catamenia, and for the birth of a first child, are as follows:—

"1. The opinions of Haller, and all the physiologists since his time, that female puberty, in the warm regions of Asia, occurs from the eighth to the tenth year, is not only erroneous but wide of the truth.

"2. The age for the earliest commencement of menstruation, either in India or England, may be taken at *nine* years. The suspicious case at *eight*, in the Calcutta column, might, however, be paralleled in this country—an instance of the kind having come under my own notice.

"3. That, hence, although the *average* age of puberty in India is earlier than it is in this country, we may doubt if puberty does actually appear at an earlier period of life in the one country than in the other.

"4. For, bearing in mind, that a proportion of the cases of menstruation under the age of *eleven*, in Calcutta, amounting to 10.04, is to be received with suspicion; perhaps quite as large a proportion menstruate under the age of *eleven* in England as in India. Thus, if we take the tables for Bengal and the Deckan together, the per centage under eleven is four; for the latter by itself, *i. e.* Bangalore, Toomkoor, and Bombay, it is 1.39 only; while, in England, the per centage is 3.15.

"5. The remarkable difference between the establishment of puberty in Europe and India consists in the far greater proportion of Hindoos who arrive at puberty at the ages of twelve, thirteen, and fourteen.

"To put this fact in a clear light, I have to remark that, in England, and the other European countries where the period of puberty has been ascertained and tabled, it has not been found that so large a proportion of instances cluster at any particular year of age. On the contrary, the occurrence of the sign of puberty is distributed more equally over a number of years—the twelfth, thirteenth, fourteenth, fifteenth, sixteenth, seventeenth—thus preserving, if one may say so, the graceful variety of nature.

"6. Although it is manifest from the tables, that Hindoo women reach the age of puberty nearly two years earlier, on the average, than happens in Europe, it does not follow that the climate is the cause. Demerara and the West India Islands have a higher mean annual temperature than Calcutta and the Deckan, and yet we know that the negress in these colonies is not earlier than the peasant women of England.

"The difference that exists between the European and the Hindoo must be sought *in race*. When it is recollected that the consummation of marriage among the Hindoos has taken place, at the latest, on the arrival of puberty, during the lapse of more than 3,000 years, and that the practice is sanctioned by ancient laws, and consecrated by custom, it is easy to conceive that those females who were the latest in reaching puberty would be the least sought after for wives; that such women would not unlikely, in many instances, remain unmarried; and that thus (owing to the origination of a preference on this ground in the selection of wives, operating through a long period of time) Hindoo women would gradually come to consist, in a proportion different from that in Europe or elsewhere, of such as by constitution are early nubile. To me there seems nothing extravagant or far fetched in this supposition. The production of a like state of things in England, in any particular district, is quite conceivable. Nothing is better established than that early puberty is a family peculiarity. Let us, then, only suppose families, possessing this kind of constitution, to intermarry, and the peculiarity in question would be propagated, extended, and transmitted, and so a race distinguished by it would be produced.

"Dr. Goodeve, in his reply to queries, states that he has known menstruation in the Hindoo continue till the age of fifty. In the table for Toomkoor, the mean age is forty-five years nearly. There are also thirteen instances, headed 'menstruation late in life,' in the Baboo's table. Six of these were persons still menstruating, one 50, and one at each of the following ages: 56, 63, 64, 67, and 68; likewise, seven that had ceased, at the following ages: 56, 57, 58, 59, 60, 65, and 80 years—instances, of course, as late could be paralleled in any country. No great weight, however, is to be attached to exceptional cases. If we may judge from the Toomkoor table, the mean age at the cessation of the catamenia is full two years earlier than it is here.

"The age for a first birth is considerably later in the Deckan than it is in Calcutta. At Bombay, the mean age is little short of seventeen years; in Bangalore, sixteen years and five months; while in Calcutta, the mean is fourteen years and eight months. But, taking the mean age for India, which is fifteen years six and a half months, we still have a social phenomenon of a very surprising kind, when compared with the age for the same event in Europe. From a register of the time of life at a first parturition in five hundred women of Manchester, chiefly of the class of manufacturing labourers, I find the mean age to be twenty-three years, whereas the mean age for a first birth in Hindostan is earlier by nearly eight years! Moreover, in the English register there is no instance of parturition under the age of seventeen, while in the Hindoo table, one-half occurs where the mother is under sixteen, and not one in ten is of the age of twenty and upwards.

"A fact, hitherto, I apprehend, unknown to Europeans, is the law of the Shastras, that females should be given in marriage *before* the occurrence of menstruation; and that, should consummation not take place until after this event, the marriage is a sin. Accordingly, it is the custom, in Lower Bengal, to send the girl at the age of nine years to the house of her husband, unless the latter be so distant that it cannot be done: and two ancient Hindoo sages are of opinion that if the marriage is not consummated before the first appearance of the catamenia, the girl becomes 'degraded in rank.' Testimony to the same effect is given by Professor Webb, who likewise joins the Baboo in thinking that, in those alleged instances of very early menstruation, a discharge of blood from injury in premature intercourse is the real explanation of the occurrence; a supposition worthy of consideration, when endeavouring correctly to estimate the value of the Calcutta tables. At Bangalore, it would seem that this revolting custom of consummating the marriage before puberty does not obtain, the husband refraining from taking his wife to his own house till not less than sixteen days have elapsed subsequently to puberty. Customs, we know, differ in different parts of our great Eastern Empire. I had occasion formerly to refer to the diversity of manners, and even morals, in so vast a country. In the present instance it might readily escape notice, when speaking of Calcutta and Bangalore, that these two cities are about as widely apart as to distance, and probably not less diverse in customs and manners, than are Copenhagen and Madrid, the capitals of Denmark and Spain.

"Viewing, as we must do, with pity and disgust, the infantile marriages of Hindostan, it is some consolation to learn from Professor Webb that the more intelligent Hindoos of the present day hesitate not to pronounce these early unions as the monster evils of their country."

Mr. Roberton regards the prevalence of these early marriages among the Hindoos as the principal circumstance which has led Europeans into error, in regard to the period of puberty in southern climates: a trait of manners, as he maintains, to be attributed not to precocity, but to moral and political degradation, and impure or debasing systems of religion. In proof of this position, Mr. R. has adduced evidence to show that, in England, at a period when some of the unfavourable circumstances just referred to still lingered amongst her inhabitants, early marriages were very common; if not in all ranks, certainly among the gentry; and that such marriages were likewise common, very recently, among both high and low, in the south of Europe, in Russia, and in Ireland; "countries where the mass of the people, from moral or political causes, and commonly both, are sunk in ignorance, or, at best, with slow and doubtful progress, emerging from it."

We learn from the facts adduced by our author in reference to the age of puberty in the female, first, that physiologists, by drawing their conclusions from a few imperfectly observed data, have fallen into error in limiting the time for the appearing of the *catamenia* to the thirteenth, fourteenth, or fifteenth year, when, in fact, it has a range of nine or ten years, instead of three; secondly, that, whatever influence certain moral and physical causes may have in retarding or accelerating the period of puberty in individual cases, the time at which the catamenia make their first appearance is not dependent upon climate: and, finally, that they continue regularly to appear to as late a period in life in southern and tropical, as in northern and arctic regions.

The next subject treated of is *the Periodical Recurrence of the Menses.* While, in the great majority of instances, the catamenia recur monthly—that is, from the cessation of the discharge at one period to its disappearance at the next—there elapses a period of twenty-eight days; in other words, the interval of about twenty-three or twenty-four days, and the duration of the flow of about four or five days taken together, fulfil a term of four weeks: Mr. Roberton has attempted to show, however, that there is a certain portion of females in whom the term is only three weeks; another, smaller, proportion in whom the term—apparently in no degree from the effect of disease—is irregular, being in the same woman, at one time three, at another time four, or six, or eight, or even twelve weeks. And another, but much smaller proportion, in whom the catamenia recur regularly every fortnight, the interval being nine or ten days, and the flow continuing four or five days.

"In all these varieties, I may remark, the secretion continues from about two to six days in general, in some three or four days longer, varying, in different women, according to natural difference of constitution; and varying, even in the same person, both in duration and quantity, from causes in no way affecting the health. Indeed, I am convinced that the catamenia in, perhaps, the majority of women, deviate not unfrequently from exact periods, and vary, both with reference to the quantity secreted, and the continuance of the flux, without there being the slightest symptoms of disease, either assignable as the cause, or appearing as the consequence, of such irregularity."

The following is the result of inquiries made in one hundred instances. The majority of the females were patients of the Lying-in Hospital, yet a considerable number belonged to a different rank in society. Mr. Roberton remarks that, although he regards the data as perfectly satisfactory, he leaves it to the reader to estimate them at what he may consider to be their proper value.

"Of one hundred women there were sixty-one in whom the catamenia recurred monthly; twenty-eight in whom they recurred after an interval of three weeks; ten in whom they recurred after intervals of varying and uncertain duration; and one, a healthy woman of twenty-three years of age, in whom they recurred regularly every fortnight. In these one hundred instances, which were taken consecutively without selection, only one occurs in which the catamenia returned every fortnight. Such cases, however, are far from uncommon, as I am at this moment acquainted with many; and, what is remarkable, this variety of menstruation generally exists as a family peculiarity. I happen to be acquainted with two families in which this is the case; and in one of these families this peculiarity extends into collateral branches. Through the kindness of several professional friends, I have received information of other instances precisely similar."

Our attention has for a series of years been directed to the collection of facts in reference to the periods of menstruation. The general deductions we had drawn from 784 cases, in which the exact intervals which occurred between the cessation of one menstrual period and the commencement of the next, were ascertained, as we believe, with certainty, correspond with those of our author. In the great majority of instances, that is, seventy-one per cent., the interval between the termination of the discharge and its recurrence was twenty-eight days—never deviating from this term, and that only in a very few instances, beyond a single day, or, at farthest, two days; sometimes anticipating, and at others delaying, in the same female, its ordinary period of recurrence, from twenty-four to forty-eight hours. In about eighteen per cent. of the cases, the catamenia recurred at intervals very nearly of fourteen days. In many of these cases, the flow on each alternate period was much more copious, and continued for a day or two longer than at the intermediate periods. The females were all in the enjoyment of apparently perfect health, and were of very different classes of society. Some of these cases were brought to our notice by the women in whom they occurred applying for our advice, fearing that the frequent recurrence of the discharge was the result of disease, or was calculated to weaken them. Upon the most minute investigation, we were persuaded that their anxiety in either respect was unfounded. In rather more than five per cent. of the 784 cases we have collected, the catamenia returned every three weeks; and in about six per cent., at very irregular and uncertain periods, varying from two to eight or ten weeks in the same individual. These latter cases occurred, generally, in females of relaxed and excitable constitutions—in several, the females were affected with dyspepsia, hysteria, or leucorrhœa.

The next subject noticed by our author is *the Age at which Menstruation ceases.*

"The circumstances," he remarks, "which attend the final cessation of the menstrua, bear some analogy to those which attend their commencement, chiefly in respect to the different ages at which they cease in different persons; and also, in their frequent irregularity both with reference to periods, and to the quantity secreted, during several of the later years of the menstrual epoch.

"I have already observed, that it is an admitted physiological principle, that child-bearing, begun at an early age, at sixteen or eighteen, for example, rarely goes on throughout the whole of what is usually regarded as its natural period. The earlier or later termination of child-bearing, therefore, in any country, will depend on the average age of marriage there. In our own country, I am led to believe, from facts which have been collected, that the average age of marriage for women is about twenty-five years."

The following table, drawn up from the registers of the Manchester Lying-in Hospital, shows, from 10,000 instances of pregnancy at all ages, the *proportion* who conceive when above the age of forty.

"Of 10,000 pregnant women, 436, or $43\frac{3}{5}$ per 1000, were upwards of forty years of age. Of these 436 women:

101 or $10\frac{1}{10}$ per 1000 were in their 41st year.
113 " $11\frac{3}{10}$ " " " 42d "
70 " 7 " " " 43d "
58 " $5\frac{4}{5}$ " " " 44th "
43 " $4\frac{3}{10}$ " " " 45th "
12 " $1\frac{1}{5}$ " " " 46th "
13 " $1\frac{3}{10}$ " " " 47th "
8 " $\frac{4}{5}$ " " " 48th "
6 " $\frac{3}{5}$ " " " 49th "
9 " $\frac{9}{10}$ " " " 50th "
1 " $\frac{1}{10}$ " " " 52d "
1 " $\frac{1}{10}$ " " " 53d "
1 " $\frac{1}{10}$ " " " 54th "

"Here it will be observed by the reader that the number of pregnancies suddenly and greatly diminishes after the age of forty-five. From the age of forty-six to fifty, both inclusive, the numbers are nearly equal for each year, indicating, I am disposed to think, that those who conceive above forty-five, *e. g.*, at forty-six or forty-seven, probably possess a peculiar constitution fitted for childbearing, even to the age of fifty. Above the latter age, the proportion dwindles down to one instance of pregnancy in 3333.

"An examination of the table naturally suggests to the mind two questions: first, have women bearing children above the age of forty-five, generally been married late in life? And second, do the catamenia in such instances always continue as long as the generative faculty? To the first question, I can give only an imperfect, but perhaps, a sufficient answer: of eleven women, three of whom had a child each in her forty-ninth year, and the other eight who had each a child above that age, I ascertained that the average number of their children was one hundred and fourteen, *i. e.*, ten and a fraction for each women; a fact indicating that they must have married rather early in life. Concerning the age of marriage in two out of the eleven, I possess some little information; the one married at eighteen, had two children before she was twenty-one, and brought forth her fourteenth child in her fiftieth year: the other was married from a boarding-school at a very early age; in her fifty-third year she was delivered of her twelfth child.

"In regard to the second question, as to whether the menstrua always continue as late as the power of conception, all the facts which have come under my observation favour a reply in the affirmative. I am able to speak confidently concerning three women who had children at advanced ages, one in her fiftieth year, another in her fifty-first year, and the third in her fifty-third year. In each of these instances the menstrua continued up to the period of conception.

"These facts do not, of course, show the ages at which menstruation finally ceases. The following table, drawn up in 1832, chiefly by the kind assistance of my friend J. G. Harrison, Esq., the House Surgeon to the Manchester Workhouse, shows this, as far at least as the number of the facts may be supposed to warrant a general conclusion. I may state that, since the period referred to, I have made a number of inquiries, and am persuaded that the largest collection of instances would not furnish results materially different. In seventy-seven women the catamenia finally ceased at the following ages:—

In 1	at the age of	35	years.	In 26	at the age of	50	years.
4	"	40	"	2	"	51	"
1	"	42	"	7	"	52	"
1	"	43	"	2	"	53	"
3	"	44	"	2	"	54	"
4	"	45	"	1	"	57	"
3	"	47	"	2	"	60	"
10	"	48	"	1	"	70	"
7	"	49	"				

The last woman referred to in the above table ceased menstruating for twelve months about her fiftieth year. Again she became regular, and so continued till the age of seventy.

The next subject discussed in the volume before us is *the Law which determines the Intervals of Conception in the Human Female.* Mr. R. puts the question: Since the duration of human pregnancy is only nine months, the same as in the cow and deer, how does it happen that women do not conceive and bring forth annually as well as they? He is convinced that there must be some law in operation to prevent this, since it is an ascertained fact, that the ordinary interval between successive births, in the same mother, when the children live to be suckled, is from twenty-one to twenty-four months. This interval, be it a little more or less, coupled with the fact of human pregnancy continuing only nine months, shows that the fecundity of women is, by some means, restrained, or rather regulated, with something of the same general certainty that happens in brutes from instinct.

After pointing out the fact that the longer period during which the human offspring, from the slow development of its organization, is necessarily dependent for nourishment and protection upon the mother, requires that a greater length of time should intervene between successive births in women than in brute females, our author proceeds to show that the cause which regulates the intervals of conception in the human female is a physiological law, by which, so long as the secretion of milk continues in the breast, the uterine organs are placed in a condition unfit for conception. Certain questions were put, as convenience offered, to 160 of the more intelligent of those married women who resort, in a state of pregnancy, to the Board of the Hospital, for the purpose of being registered as home patients. As Mr. R. was careful to make the inquiries himself in every instance, he had no doubt whatever of the general accuracy of the results. This was in 1831. Some years subsequently, Dr. Laycock published inquiries made of 135 married females.

"Respecting the 160 Manchester women, it may be stated that the average age was 30½ years; their aggregate number of births 686, or 4¼ for each woman; the number of children which lived to be weaned, 512, or 3¼ for each mother; and the mean age at which they weaned their children, 15¼ months. Of these women, 81 had become pregnant once or oftener during lactation, and the remaining 29 had never conceived under the same circumstances.

"Of the 81 women that had become pregnant during suckling, 27, who had produced 101 children, had conceived only 38 times during lactation; 42 who had always become pregnant while suckling, did not, on the average, conceive till they had suckled for 19½ months nearly; and 22 (the remainder of the 81 women) had been in the habit of conceiving during lactation, and soon after parturition.

"The average age for weaning their children was different in the two classes of women; in those, namely, who had not conceived during suckling, and those who conceived once or oftener while so engaged. For the 79 women comprising the former class, it was 14¼ months; and for the 81 women of the latter class, it was 15¾ months.

"It further appeared, as a general fact, that in healthy women, when the child was still-born, or when it died soon after birth, another birth took place within the ensuing twelve months; and that also, speaking generally, women under forty years of age, and in health, conceived in from one to three months after weaning, whether that event happened at an early or at a comparatively late period after parturition."

Of the 160 women above referred to, 99 had never menstruated during suckling. Of the remaining 61, seven, who had suckled altogether 16 children, menstruated each only in one instance of lactation. One was in the habit of menstruating after suckling four months; 4 after six months; 2 after seven months; 2 after eight months; 2 after nine months; 2 after ten months; 1 after eleven months; 7 after twelve months: and 2 after fourteen months. Thirty-one menstruated regularly during lactation. Of those women who had usually conceived while nursing, the majority did not menstruate.

Dr. Laycock's inquiries were made of 135 married females, with the following results: 209 pregnancies took place during 766 lactations, or at the rate of 1 in 3.66, or about 27 per cent.

"The 209 pregnancies occurred in 76 females as follows:—

Number of Females.	Number of Children.	Number of times pregnant during Lactation.	Average.
30	163	30	1 in 5.4
12	65	24	1 in 2.6
10	78	30	1 in 2.6
13	93	52	1 in 1.8
3	25	15	1 in 1.6
4	29	24	1 in 1.2
2	14	14	1 in 1.0
2	25	20	1 in 1.2
76	492	209	1 in 2.34

"The average duration of lactation in the 135 females was 13 months nearly; of the 76 it was 14.4 months. It will be seen that, in 30 of the 76 who became pregnant during lactation, pregnancy so occurred only once in each: so that, for practical purposes, these might be deducted. This reduces the number of females who conceived while suckling to 46, or 33.9 per cent., being nearly 1 in 3."

"From the inquiries I have made," Dr. Laycock remarks, "it appeared very evident that there were two classes of females. In the one, the pregnancy during lactation was the rule; in the other, the exception. Of the former class, there appear 19 only in the 135, or 1 in 7. These 19 females averaged 5 children each; 9 of these had 46 children, and always became pregnant during lactation; 10 had 48 children, and each of the 10 escaped becoming pregnant once only during lactation. The period of lactation, at which pregnancy took place, varied from three months to two years. The average in 106 instances was 12¼ months. The average age of 135 females at the time of marriage was 22 years; the average number of children weaned, 5.7."

From the foregoing inquiries, Mr. R. draws the following corollaries:—

"*First.* That in seven out of eight women who suckle for as long a period as the working classes in this country are in the habit of doing, there will elapse *an interval of from twelve to fifteen months* from parturition to the commencement of the subsequent pregnancy.

"*Second.* That, in a majority of instances, when suckling is prolonged to even nineteen or twenty months, pregnancy does not take place until after weaning.

"*Third.* That lactation having this influence on the generative function, we are warranted in regarding the secretion of milk as the *cause* which regulates the periods of conception in mankind, as instinct operates to the same end in graminivorous quadrupeds, and probably in all other animals."

The *Hysteric Constitution* is the subject of the next essay. The remarks of Mr. R. in relation to this subject are replete with interest. He draws a very marked distinction between "nervous disorders," so called, and hysteria. These disorders are rather the effects of chronic derangements of the digestive organs in connection with exhaustion, from over-use, of the organ of the mind—the brain; they are but signs of the wasted condition of the system—of a system, in many cases, more or less a wreck. The hysteric affection, on the other hand, although very often called into activity, and aggravated by the same causes as the former, requires, according to our author, in the subject of it, a diathesis *sui generis*, which he would denominate the hysteric constitution, without which it will not exist.

Mr. R. presents the delineation of the peculiar traits by which the hysterical constitution is distinguished, as drawn by the free, bold, and vigorous hand of Burton, in his "Anatomy of Melancholy." This is too long to copy. Even were it shorter, it would be unnecessary to present it to our readers, as most of them must, or at least should, be familiar with it.

Instead of attempting a definition of hysteria, Mr. R. has preferred "the easier task," as he denominates it, of detailing a case, in order to illustrate its character in one of its most ordinary forms.

"A healthy girl suffers some unlooked-for grief or disappointment; soon after, it is noticed that she is pensive and languid, and that her complexion has undergone a change, being no longer natural, but sallow. Her bowels *work*, which means that they are filling with air, and are agitated with spasmodic contractions. She seems to be repressing a violent disposition to weep; suddenly she falls back in her chair, slightly convulsed, particularly in the arms and lower extremities; a handful of cold water is thrown in her face, she opens her eyes, gives a stupefied stare, and relapses into her convulsions again. She is put to bed, where she has repeated returns of the convulsive motion, with intervals of consciousness, during which she presses her hand on her stomach, eructates with a loud noise, and struggles to eructate more. The convulsions now subside into a kind of stupor; the stupor, by degrees, into natural sleep, and the girl, in a few hours, is quite well, saving only an unusual languor, and that she voids, once or oftener, a large quantity of limpid urine."

This Mr. R. presents as a mild instance of spasmodic hysteria, with the remark, however, that the disease assumes a greater number of forms almost than we have terms to designate them by. The following forms and varieties, with two or three exceptions, he has himself repeatedly witnessed in practice.

"Two or more of these, he adds, are sometimes so blended together, and the more noteable symptoms of the present hour so unexpectedly give place to fresh trains, as to constitute the most perplexing series of morbid phenomena imaginable, which the patient and experienced observer alone can unravel and refer to their true cause.

"1. SPASMODIC HYSTERIA.—Besides the regular hysteric paroxysm of which the case above described is an instance, this form of the disease is exhibited in the following varieties, in each of which some one symptom is chief and predominant:—

"*Hysteric cough.*—Dry, perpetually barking; with or without difficulty of breathing.

"*Hysteric hiccup.*—Sometimes violent, beyond the common singultus.

"*Hysteric exclamation.*—Sighing, agitation, with the utterance of some such exclamation, at regular intervals, as heigh-ho! heigh-ho!

"*Hysteric sighing.*—Recurs in paroxysms after irregular intervals, consisting in convulsive inspirations, loud, exhausting, distressing to hear.

"*Hysteric dyspnœa.*—May continue for several days, and with a severity which, if originating in any other cause, would destroy life.

"*Hysteric dysphagia.*—Proceeding, apparently, from dread of suffocation in the act of swallowing.

"*Hysteric lock-jaw.*—Stiff neck; motion of jaw impaired or suspended; other local hysteric affections, as a pain in one of the breasts, or between the shoulders.

"*Hysteric rigidity of other muscles.*—Such affections have been known to recur monthly; contraction of the muscles of one-half of the face, or of the muscles of one hand, or of the flexors of one of the larger joints.

"*Hysteric palpitation.*—A degree of palpitation is usual in various forms of hysteria; but in certain instances it constitutes the prominent symptom, every pulsation violently shaking the whole frame and producing the appearance of alarming exhaustion.

"2. HYSTERIC PALSY.—Generally commencing or combined with spasmodic symptoms, which lead to the detection of its real nature.

"*Hysteric paraplegia.*—(Palsy of one symmetrical half of the body), attended generally with palpitations, flutterings, partial headache, and the like.

"There are various minor varieties of this form.

"3. HYSTERIC DISTURBANCE OF MIND.—Often variable and fugitive, but sometimes chronic.

"*Hysteric delirium.*—Commencing with obvious signs of hysteria; of uncertain duration, from a few hours to many days; ought to be discriminated from true mania, in which hysteric symptoms rarely occur, even in those who have previously been liable to the disease.

"Other varieties of this exist, as obstinate valetudinarianism and despondency, combined with hysteric symptoms.

"4. HYSTERIC SOPOR.—Apparent insensibility to external objects, inaudible respiration; resembles death. The patient may be roused by completely closing the lips and nostrils.

"5. HYSTERIC PAINS often imitate inflammation of an important organ or texture; generally other hysteric symptoms present; also leucorrhœa, or derangement of the menstrual function. Some great incongruity in the symptoms leads to the detection of the real nature of the affection, more particularly absence of that peculiar depression of countenance which characterizes inflammation of an important organ.

"*Hysteria imitating pleurisy.*—Pain most acute, generally under the left breast, increased on pressure; respiration panting; pulse rapid, variable.

"*Hysteria imitating hepatitis.*—Pain and acute tenderness on the right side; attack sudden; pulse may be quick, but is not hard.

"*Hysteria imitating peritonitis.*—Seizure not gradual, but sudden; tenderness most acute, particularly on a light degree of pressure.

Hysteria imitating hysteritis.—Pain in the uterine region extreme; greatly increased on light pressure; patient more restless and active than in true hysteritis.

"*Hysteria imitating pericranitis.*—Excruciating pain of scalp, with extreme tenderness; vomiting; intolerance of light; pain variable, and frequently confined to one spot.

"*Hysteria imitating arthritis.*—Wrist may be the seat; commences with slight swelling and great pain which may continue long; the wrist becomes drawn and rigid, the hand wasted, the surface exquisitely tender. If in the knee, it is semi-flexed, and there is slight tumidity, acute pain, exquisite sensibility; generally the joint may be moved in sleep, without producing evidence of painful sensation.

"6. HYSTERIA THAT IS VOLUNTARY.—A power possessed, in rare instances, of bringing on at will a paroxysm of spasmodic hysteria.

"7. HYSTERIA IN THE MALE.—Chiefly of an irregular kind, as flatulent suffocation, palpitation, mental excitement, with *globus*, and limpid urine, &c., seldom reaching to convulsive action of the voluntary muscles, *i. e.*, to a regular fit."

According to Mr. R., the essential feature of the constitution liable to hysteria is a peculiar irritability of the nervous system, existing throughout the duration of life, and often manifesting itself in a degree greater than the power to resist particular hurtful impressions. In consequence of the excessive excitability of the nervous system, various causes, mental as well as physical, produce certain morbid effects, already characterized and partially enumerated—effects which, in the aggregate, have received the name of hysteria. The inordinate and peculiar nervous excitability alluded to, Dr. R. is inclined to believe originates, in all cases, in congenital defect in the nervous structure, although it may afterwards be aggravated by a variety of circumstances, the chief of which are derangement of the menstrual function; an idle, sedentary, luxurious manner of living; and the cultivation of the emotions and passions to the neglect of the understanding. Dr. R. believes it probable that in those in whom the hysteric constitution manifests itself, there is also some congenital defect in other systems of organs than the nervous, more especially the digestive and assimilative organs; for although, he remarks, in many instances the hysteric patient is robust and vigorous, much more generally she is of slender delicate make, capricious appetite, feeble digestion, and exceedingly variable bowels.

From the general summary of the views of Dr. R. in relation to hysteria, with which the essay concludes, we quote the following:—

"It is an error to regard hysteria as exclusively a symptom of uterine derangement, or of spinal derangement, or an affection of the brain, or as being solely a disease of females.

"The peculiar nature of the causes, as well as the symptoms of hysteria, in all its forms and varieties, points to the nervous system as the primary seat of the disease; and it would appear, further, that not always the whole of that system is affected, but rather, sometimes, a particular part thereof; an inference illustrated and strengthened by sound analogy."

"The mind exercises a remarkable power over the phenomena of hysteria; in rare instances causing paroxysms of the spasmodic form of the disease, by a mere act of the volition, and in other cases sufficing to effect, or powerfully to aid in effecting a cure; facts which seem to prove, that hysteria is as purely and unequivocally an affection of the nervous substance as perhaps any disease which could be named."

The first obstetrical essay in the present work is on the *Bony Pelvis, considered obstetrically*, intended to show that the pelvic passage in the human female is as well adapted, when unaffected by disease or accident, to the easy and safe passage of the fœtus as is the pelvic passage in the females of the lower classes of animals, and that, in reference to the mechanism of parturition, woman is exposed to no more difficulty, naturally, than the brute creation.

The next essay is entitled, *How to use the Midwifery Forceps with safety to the Mother and Child.* It contains some judicious observations on the proper mode of applying and acting with the forceps under the several circumstances of labour in which a resort to them is rendered necessary. The author also suggests a modification in the form and dimensions of the forceps, in order to adapt it more readily to seize the head of the child, and to lock in every position and situation of the head requiring this kind of assistance. The forceps described do not strike us as superior in any respects, however, to those in common use in this city.

The following essay is on the *Risk of Laceration of the Uterus in Labours complicated with Deformity or Narrowness of the Inlet of the Pelvis.* On this subject the remarks of the author are replete with interest and instruction.

From a series of cases, ten in number, of ruptured uterus, which fell under his own observation, and twenty-seven cases collected from English works of credit, the author draws this general conclusion: that when rupture of the uterus does happen from contracted inlet, the interval from the earliest signs of labour to the occurrence of the accident is seldom great.

In the major proportion of the thirty cases, namely, in twenty-two, the period of labour at which the accident occurred was thirteen hours and under, from the occurrence of the earliest signs of commencing parturition; in ten cases, only, did the rupture occur beyond the seventeenth hour of labour.

From the result of thirty cases in which the number of the labours is given, it is inferred that laceration rarely occurs in a first labour, and oftenest, perhaps, in a second, third, fourth, and fifth. At all events, it would seem, Mr. R. remarks, that those who are fruitful mothers, as shown by a high number of births, are comparatively less exposed to this fearful accident than those earliest in the career, or lower in the scale of fecundity.

In every instance of laceration of the uterus that Mr. R. has seen, the rent has always, through whatever other parts it may have passed, divided in some direction the cervix, which seems to give way with nearly equal readiness in all parts of its circumference. Of thirty two cases, in 8 the laceration was anterior; in 11, posterior; in 5 lateral; in 3 antero-lateral; in 3 postero-lateral; and in 1 the cervix was separated from the vagina excepting by a shred.

"It would seem to be enough," remarks Mr. R., "for the production of the accident, that the inlet is too contracted easily to admit the descent of the fœtal head, or the breech, should that be the presenting part. In a great majority of instances of slight contraction of the inlet, in perhaps three cases out of four, the diminution of space is caused by the promontory of the sacrum encroaching on the antero-posterior diameter. On this ground, probably, we may explain why, in a somewhat greater number of cases of laceration, the rent is found in the posterior rather than in the anterior part of the uterus. And the cause next in frequency is one or more projections of bone springing from the inner surface of the *ossa pubis* at the symphysis. In all cases of difficult labour, therefore, wherein we are led to examine the condition of the brim, in order to determine the nature of the obstruction, when we are satisfied that the sacro-vertebral angle does not project unnaturally, we ought to direct the finger to the inner surface of the pubis, both to discover if the symphysis is well formed, and also whether there is any bony growth projecting into the pelvis; nor ought the hand to be withdrawn till we have ascertained the figure and dimensions of the brim in its other obstetric diameters."

In regard to the indications of an impending laceration, Mr. R. is inclined to believe, from what he has observed and learned from others, that "a crampy pain and tenderness on pressure, in some particular part of the lower abdomen, precede for a time the laceration of the uterus, occurring from tightness or deformity of the pelvic inlet.

"There is no mystery in the accident more than in the rending of a piece of cloth when it is overstretched. The rent of the uterus, how far soever it may extend in any direction, is always found in its commencement, or in its course, in or near that part which in labour is necessarily jammed between the fœtal head and the edge of the contracted inlet. Hence, as the uterus, in its efforts to force the child into the pelvis, acts by shortening itself, the cervix is, in some parts of its circumference, a fixed point, being held as in a vice, during a pain, between the head and the brim, and, after a few pains, tears at or near this fixed point, the rent extending more or less, according to the force of the pains, the figure of the ledge against which the uterus is jammed, the strength of the viscus itself, and perhaps other circumstances which are unknown to us. From this account, the inference might seem warranted, that the rent must always be near to that part of the brim which is faulty; but a moment's consideration will banish this notion. Undue prominence of the sacro-vertebral angle, were this true, would as a matter of course cause the rent to take place in the posterior wall of the uterus, which is far from being always the case. In this species of deformity the fœtal head necessarily is thrown forward on the top of the pubis, or rather on the anterior half of the brim; and should this portion of the brim be sharp, contracted, or otherwise misshapen, the laceration will probably occur in the uterus in front, or somewhat laterally. That part of the cervix which is at once the *most firmly jammed and nearest the centre of uterine action*, which I take to be the centre of the fundus, will, *cœteris paribus*, the soonest lacerate."

The cause of the *crampy pain* which so generally precedes laceration of the uterus in the cases referred to, Mr. R. supposes to be caused by the vice-like pressure of the cervix uteri, or rather that part of it which is caught between the fœtal head and the brim of the pelvis.

The following are the views of our author in regard to the means to be adopted to prevent the occurrence of laceration, when it is discovered that the head does not pass through the brim, owing to want of space:—

"We cannot, unfortunately, predict of a given case what degree of compression, in a narrow inlet, the uterus will endure without danger. And since, when rupture actually takes place, the mischief is so dreadful, we are not warranted in trying an experiment as to what the uterus will safely bear. Whenever the head is retained above, or firmly locked in the inlet, after labour is begun, I conceive that the accoucheur is bound to regard the case as one of *imminent danger* to the mother. It is true, no mischief may occur for many hours, or even days. The scalp may be pushed, in the form of a cone, low into the pelvis, the bulging part of the head be wonderfully flattened, and the lips of the uterus may hang in the vagina in large tumid lobes; all this I have witnessed; and yet the parent and child shall escape injury. But such instances are no rule. They warn us, it is true, against rash interference; against stepping into the help of nature, without anxious, sedulous, yet calm deliberation. But they ought to influence our practice even less than instances of a diametrically opposite kind, where rupture of the uterus happens in four, six, or eight hours after the first signs of labour; for surely the life of the parent is the first object of consideration. Even her life, doubtless, may justifiably be put in some hazard to afford the fœtus a chance of life—how far is indeed a difficult problem; but, whenever the life of the mother and that of the fœtus are poised in opposite scales, no one can hesitate which ought to preponderate, especially too since, in the case I am supposing, the death of the parent, or rupture of the uterus—which is nearly, at least in a practical point of view, the same thing—occasions the death of her offspring. The data I have furnished appear to me to warrant the following practical rules:—

"1. That as, in the majority of those instances of rupture of the uterus caused by faultiness in the brim, the accident occurs within twelve hours after labour has commenced, the practitioner ought, in every case of labour involving this impediment, to solicit a consultation. Whatever may be the amount of his experience, he is not at liberty to rely solely on his own judgment, if a second opinion can be obtained.

"2. Is there space to admit the passage of the head, allowing for moderate compression and moulding? If this is determined in the affirmative—I say nothing of the facts on which such determination ought to be founded, they are to be seen in the works of Burns and Dewees—then the progress of the labour is to be patiently but most attentively watched. If in the negative, there can be no use in much delay: embryulcia ought to be had recourse to. Moreover, when we have *satisfactory* proof that the fœtus is dead, the head ought to be forthwith perforated, even although we conceive that it might be born by the natural pains; for surely nothing is more absurd than that the uterus of a living woman should be *in any degree* bruised, or its integrity endangered, to preserve the integrity of a dead fœtus.

"3. When it is determined to watch the efforts of nature, the state of the *os uteri* demands particular attention. Blood-letting, if there be the kind of rigidity in which this remedy is useful, should be performed, not forgetting, however, that if the deformity is owing to *malacosteon*, the constitution ill bears the loss of blood. Unless there be entire absence of labour pains, the patient is to lie perfectly still in bed, either on her side or back; if on the former, which is commonly the easier position, the obliquity of the uterus generally requires that the abdomen be supported by a broad flannel binder: when there are labour pains, and the *os uteri* is becoming tumid from compression, we may, if it is practicable, raise the cervix gently with the finger, so as to disengage it from the pressure of the head.

"4. How long is the practitioner to rest satisfied with watching the efforts of nature? This will depend on their effect. If the head moulds readily, the tumefied scalp descends, and the bulging part of the cranium makes some progress through the inlet, we may hope that the base will ultimately be forced down without injury to the mother. But when it is the scalp merely which the pains affect, this is discouraging; and when the head, notwithstanding continued uterine pains, does not become fixed in the brim, but may be raised, on the cessation of a pain, by the finger, then we have reason to fear either that the head is above the standard size, or that the inlet is more contracted than we had calculated. And what remains is to determine whether to perforate the head at once or to try first what may be done by the forceps, not failing to remember that the pelvis of the mother is not like that of the skeleton, but that it is lined, especially in the inlet, with textures at once most important to life, and easily injured by instruments."

"*How to Turn with the Least Suffering to the Mother,*" is the title of the next essay. It contains many judicious directions how to perform this dangerous operation with the infliction of the least possible suffering to the mother and the greatest degree of safety to her and the child. A careful study of these directions could with propriety be recommended to the student and young practitioner. They contain nothing, however, of a particularly novel character. With the principles and practice they inculcate, the American practitioner is perfectly familiar.

Next in order follow some observations on "*The Causes of Prolapse of the Funis in Labour.*" The funis being a heavy rope, specifically heavier than the liquor amnii, when the waters escape, if the presenting part of the child does not occupy the inlet of the pelvis, it floats into the vagina with the current. The chance of the accident will be increased if the patient is standing or sitting at the moment when the rupture of the membranes takes place. Mr. R. relates nineteen cases to establish the correctness of the above statement. We could add double the number.

The mortality from prolapse of the funis in the author's practice has been great. Of twenty-two instances, fifteen of the children were still-born; of the seven children saved, two were footling cases.

The methods pursued by him to save the life of the child were, 1, *Turning.* "In general," he remarks, "turning, even so early as an hour after rupture of the membranes, the head presenting, is attended with difficulty to the accoucheur, with suffering and some danger to the mother, and commonly with destruction to the child. In such circumstances this method ought not to be resorted to. But should the accoucheur be in attendance when the waters give way, and immediately detect the funis, turning is the best resource." In presentation of the funis with the shoulder, the operation, if it be not a first labour, may generally be expected to succeed. 2. *Lodging the funis above the head.* In this manœuvre Mr. R. succeeded in one instance; in two others he failed. He thinks, however, that with a moderate degree of dexterity, the funis may, *now and then,* be successfully reduced. 3. *Delivery with the forceps.*

"*The Best Mode of Securing the Speedy Expulsion of the Placenta*" is next considered. The rules laid down by the author are, to retard or rather regulate the passage of the child through the *os externum* by the hand. When the intervals between the latter stages of labour are unusually long, to apply gently friction to, or to gently and evenly grasp, the *fundus* of the uterus. Whenever labour is attended with cramps in the neighbourhood of the uterus, towards the termination of the process, to cause the patient to turn on her back, and the practitioner with his left hand over the fundus of the uterus to apply gentle pressure and friction. If the placenta is not thrown off within fifteen minutes after the birth of the child, to gently grasp and rub with the hand the *fundus* of the uterus, at the same time cautiously tightening the funis; and to continue the same cautious manipulation of the uterus subsequently to the delivery of the placenta, in order to secure complete and permanent contraction, and thus guard against the occurrence of hemorrhage.

On "*Secondary Uterine Hemorrhage.*" This form of hemorrhage occurs under circumstances such as these: "a woman who has had, perhaps, a favourable confinement, the expulsion of the placenta having been followed by no undue discharge of blood, is seized, after one, two, three, or even four weeks, with uterine hemorrhage:"—excluding of course the menorrhagia lochialis, or constant draining of blood; the flooding which, commencing at the time of or soon after the expulsion of the placenta, returns repeatedly at short intervals, generally attended with after pains, for days or even for weeks, and the floodings caused by portions of the after birth being suffered to remain.

Of this secondary hemorrhage Mr. R. relates fourteen cases. In none of these had the preceding labour been severe; nor does it appear that in any the placenta was extracted by the hand, or that there was much hemorrhage accompanying or immediately following the expulsion of the placenta. In one case, the hemorrhage occurred on the seventh day after delivery, in two on the ninth, in two on the tenth, in one on the eleventh, in one on the twelfth, in two on the fourteenth, in two on the sixteenth, in one on the nineteenth, in one on the twenty-second, and in one on the twenty-seventh. In five of the fourteen cases there was a single attack only of hemorrhage; in the remaining nine, hemorrhage occurred oftener than once.

Although sometimes troublesome to control, still Mr. R. has not met with an instance of secondary hemorrhage that terminated fatally. One of his friends communicated to him one such case.

Secondary hemorrhage is, comparatively, of rare occurrence, happening, probably, not more than once in several hundred puerperal women.

Mr. R. thinks it probable that the discharge of blood in these cases is allied in its nature to menorrhagia; only the discharge is more copious on account of the comparatively greater size of the uterine vessels and the greater readiness with which the uterine cavity admits of expansion in the puerperal than in the unimpregnated state. He doubts whether it be correct to ascribe the hemorrhage solely to the over-tardy contraction of the uterus in the transition from the puerperal to the ordinary state, or to the imprudence of patients in assuming too early an erect position. He is inclined to think that the form of uterine hemorrhage under consideration depends, in a considerable degree, on a menorrhagic diathesis.

"With reference to the treatment," he remarks, "rest in the recumbent position is essential; compression of the abdomen ought to be made by a well adapted flannel binder; in the outset, opium is useful; the plug is sometimes necessary; and the ergot of rye, in small repeated doses, I regard as by far the most valuable remedy. Alterative and aperient medicines are of importance, not in this only, but in the hemorrhages generally attendant upon abortion. As a tonic, I prefer to every other sulphuric acid. In order to perfect recovery, such patients need removal from family cares and duties, a pure air, judicious dieting, and, in most cases, exemption from the drain of lactation."

"*Relaxation and Descent of the Uterus, Vagina, and Bladder in the Puerperal State.*" We can present only the general conclusions of Mr. R. in reference to this subject, drawn, if not entirely from the instances narrated and tabulated in the paper before, still from, as he assures us, sufficient experience.

"1. Descent of one or more of the pelvic viscera is not, as is commonly believed, a complaint chiefly of middle or advanced life. It is true, *complete prolapse*, the last miserable state of the disease, is generally found in those who have passed their thirtieth or thirty-fifth year, but the first stage of descent ordinarily commences early in the child-bearing period of life.

"2. In a majority, perhaps I might say considerable majority, of instances, the complaint follows a first labour.

"3. When first labours are lingering, especially when this is owing to the great size of the child, we are to be on our guard against the occurrence of the complaint during the puerperal period: that is, during the *first six or eight weeks.*

"4. The complaint is curable if early detected; also when the proper treatment is adopted in the puerperal period next following that in which it first appeared. But if there is neglect, each succeeding labour leaves the disease less remediable. And further, when it has once manifested itself in the puerperal state, even although it may have seemed to be cured, we are bound on every recurrence of that state to subject the patient to precautionary restrictions.

"5. Rest in the recumbent posture, which must be nearly uninterrupted, is the most powerful, indeed the chief, means of cure—other measures that science may suggest being meanwhile pursued, especially such as invigorate the health and improve the condition of the womb and vagina.

"6. Those subject to even the slightest visitings of this complaint ought not, commonly, to suckle a longer period than five or six months; since prolonged lactation, next to frequent child-bearing, tends most powerfully to produce a condition of the vagina favouring *further descent.*

"7. In instances occurring *not in the puerperal state,* the treatment must be adapted to the condition of the patient and other circumstances. Where science has failed in accomplishing a cure, and where there is little or no irritation of the vagina, and but little discharge, the stalk pessary, worn in the day time, will be found useful: but, in the majority of those distressing cases, the perineal supporter is to be preferred. I have tried, in one peculiarly distressing instance, Dr. Marshall Hall's operation, the removal of longitudinal strips of the lining of the vagina, to diminish the canal, but without success. I have also tried to close the vagina in the two lower thirds of its aperture: but when success was likely, a fit of coughing ruptured the adhesions.

"8. Much may be done by change to the dry, bracing air of the sea coast; by attention in other ways to the health; and in particular by a regard to the condition of the uterus itself—to regulate its function, if in the child-bearing period, and to remove engorgement and increased weight of the whole or a portion of the organ, as well as those discharges which depend on inflammatory action in the os and cervix uteri. Without embracing, to the full extent, the views of Dr. Bennett, I assent generally to the truth of what he has written on prolapsus uteri."

"*Cases and Observations in illustration of the Signs of Pregnancy.*" The cases detailed in the present paper are, Mr. R. remarks, a selection meant for the instruction and guidance of junior professional men; who may profit, if they will, by the mistakes of another, instead of purchasing all their knowledge on this subject at the cost of personal experience—a cost those perhaps alone can rightly estimate who have had it thus to pay. The cases are interesting, and, with the remarks of the author which accompany them, are calculated to convey instruction to the young practitioner. We agree as to the correctness of the rules laid down for our guidance, namely:—

"First, always to *doubt* alleged pregnancy in the married when there is a regular, periodical, bloody discharge, however slight it may be. Second, always to *suspect* pregnancy in the married, in the child-bearing period of life, whenever the menses are unduly absent. Third, to *suspect* pregnancy on being called to prescribe for the unmarried, in the rank of servants, when the menses have been suppressed for a couple of months."

These doubts and suspicions are always proper under the circumstances referred to, that we may be upon our guard, and make the necessary investigations to satisfy ourselves as to the existence or non-existence of pregnancy. In the earlier months, to determine this positively may be attended with some considerable difficulty, and an opinion founded upon the absence of the ordinary signs of pregnancy may turn out to be erroneous; but at a somewhat later period, in the indications derived from abdominal auscultation, we have the means of determining with great certainty, excepting in a few cases of very rare occurrence, the existence or non-existence of a fœtus in utero. Of this means Mr. R. makes no mention.

From the next essay, on "*The Puerperal State and its Dangers,*" we quote the remarks of the author on the subject of puerperal fever.

During the spring of 1831, this disease prevailed amongst all classes in Manchester, but chiefly among the poor, and produced a large amount of mortality among parturient females.

"On the 4th of January, 1831, a meeting of the medical officers of the Lying-in Charity was summoned, in consequence of a great mortality having occurred during the four preceding weeks among the patients of one of the midwives. The circumstances were found to be these: A midwife in great practice among the patients of the Charity, had, on the fourth of the preceding month, December, 1830, delivered a poor woman, who soon died with symptoms of puerperal fever. From this date to the 4th of January inclusive, exactly one month, this midwife delivered thirty women, residing in different parts of an extensive suburb, of which number, sixteen caught the disease, and all of them ultimately died. These were the only cases of puerperal fever which had recently occurred in connection with the Charity. The midwives, commonly twenty-five in number, then delivered on an average about 90 women per week, or nearly 380 in a month. Now, of this number, delivered during the month in question, none had puerperal fever excepting the patients of the one alluded to. Yet all the time this woman was crossing the other midwives in every direction, scores of patients of the Charity being delivered by them in the very same quarters where her cases of fever were happening."

It was decided that this midwife should abandon her practice for a period, and go into the country.

"In a short time after this meeting, puerperal fever among the patients of other midwives, as well as in private practice, began to appear in various parts of the town. It never prevailed more generally, nor perhaps ever more fatally, in Manchester. By about the beginning of June it had disappeared.

"The fact that sixteen cases of puerperal fever occurred in one month in the practice of a single midwife, while the patients of the other midwives were exempted from the disease, leads naturally to the conclusion that this midwife was the *medium* of communicating, I take not upon myself to say *in what manner*, the malady from one woman to another, from one affected with the fever to another in health. Again, little more than half of the thirty women delivered by this midwife during the month before mentioned took the fever. On some days all the women she delivered escaped; on other days out of three or four, one or more of them were seized. This is nowise opposed to what is observable in the career of other infectious maladies, and may be explained by assuming that there is a difference in different women, and perhaps in the same women at different times, in regard to predisposition. That the fever was occasionally conveyed *directly* from the diseased to the whole, I possess other evidence. In one instance within my knowledge, a practitioner introduced the catheter, for a poor woman under this fever, late in the evening: and in the course of the same night he had to attend a lady in her confinement, a little way in the country. On the morning of the second day after delivery, this lady had a rigor, and the other early symptoms of the malady. In another instance a surgeon was called, while in the act of inspecting the body of a woman who had died of puerperal fever, to attend a labour; within forty-eight hours after being put to bed his patient was seized with the fever.

"That besides being infectious, that is, capable of being conveyed in some tangible medium from one woman to another, this disease is propagated by a cause of a more general kind, probably existing in the atmosphere, *after the fever has prevailed for some time in a locality*, cannot be doubted. Numerous cases occurred during the epidemic in Manchester, the origin of which could not, I apprehend, have been traced to infection properly so called."

"The cases of puerperal fever, according to my observation," remarks Mr. R., "were resolvable into three classes: first, those, the most numerous certainly, in which no medical treatment was of avail; where the pulse was 140 and upwards, resembling, in the most striking manner, the pulse when rupture of the uterus had taken place in labour; and where the heat of the surface never rose to the natural standard: second, those where leeching, calomel and opium, blisters, and other counter-irritants were indicated, and occasionally proved successful: third, those cases in which bleeding by the lancet, owing to the complete development of the heat of the body, the acuteness of local pain, and the distinctness and comparative strength and hardness of the pulse, was clearly indicated; and which, when employed early in this variety of the disease, was almost uniformly successful. The latter class of cases became more prevalent towards the decline of the epidemic. During the first two months of its prevalence, on the contrary, few recovered."

At the period when this epidemic prevailed, of the township to which it was chiefly confined, we are told, that everything in relation to its sanitary condition was in a most deplorable condition; since that time a great and growing improvement has taken place in the condition of the streets and the dwellings of the labouring classes. It is further stated that, during the last twenty years, though there have been occasional cases of sporadic puerperal peritonitis, the complaint has not been epidemic. How far this exemption is owing to the improved diet, more orderly habits, and supposed greater intelligence of the labourers, together with the better sanitary condition generally of the town, is an important question.

Of the "*Notes on Subjects connected with Pregnancy and Operative Midwifery,*" though they present many points of interest, and some sound practical observations, we cannot attempt an analysis; nor can we extend this notice of Mr. R.'s work sufficiently to present even a hasty sketch of the leading points embraced in his excellent and judicious defence of scientific midwifery, under the modest title of "*An Apology for the Study of Midwifery as a Science,*" and of the supplementary remarks, on Hindoo Midwifery.

A short account of the "*Treatment of Laryngismus Stridulus, or Child Crowing,*" closes the volume. This paper consists of the history of a series of cases of this disease, presented with the view of illustrating the importance of "a free exposure to a cool, dry atmosphere," as one of the principal means of cure, "especially in the more severe and aggravated forms" of the disease. Although Mr. R. cannot affirm the invariable success of such exposure in arresting the disease, in no instance, he affirms, has it proved injurious. The success of this plan of treatment, in his hands, has been very remarkable—in a large proportion of the cases, decisive. Of course, he adds, the exposure has been had recourse to *with due caution*, a condition necessary, however, in the employment of every kind of remedy possessed of considerable power.

We present the general remarks of the author with which the paper concludes:—

"In reference to these twenty-two cases, the first thing to be noticed is the period of the year at which the crowing commenced, namely, from November to April. Now as the patients were all of a rank above the labouring class, had nurses and nurseries, they would probably be more within doors, be more secluded from the external atmosphere, in a word, would spend a more artificial life, than the children of the latter do in the warmer season. Such infants, assuredly, are habituated to a very different mode of living, when compared with those in a lower station, who are to be seen abroad almost in all kinds of weather, daily, throughout the year. I would not be understood as maintaining that this nursery seclusion explains why the complaint so commonly occurs in winter and spring; but the fact that it is rare in the families of the working classes seems in favour of such a conclusion.

"The age at the accession of the disease was in most cases from about the fifth to the twelfth month. Above twelve months there were only three cases, and the highest of these is fifteen months.

"In connection with the ages of the infants is the *kind* of teeth, the irritation from which may be regarded as perhaps the chief cause of the disease. In eighteen, the irritating teeth were the incisor; in three the bicuspid; and in one the canine.

"With reference to the influence of sex in predisposing to child-crowing, this probably is little if anything. The proportions in the foregoing instances are ten females to twelve males. It is otherwise, however, seemingly with the mortality; for in eight cases of death which have come under my notice during the last twenty-five years—the first happened in 1825—two only were females.

"Concerning the treatment—My remedies are few and simple. In all the infants there was derangement of the first passages; the digestive power was more or less impaired, and the motions were pale or otherwise discoloured, and of a fetid odour. To correct this I have given rhubarb, and mercury with chalk, in small doses, and an occasional teaspoonful of castor oil. Leeches to the head I have rarely advised, unless when the complaint was complicated with convulsions; and even then only when there were drowsiness and heat of scalp. The diet I have regulated with strictness, and am of opinion that a spare diet is of incomparably more importance than any articles of medicine.

"Change of air—and I must be understood to mean change to a cool, bracing atmosphere—does good by soothing the nervous irritability, lessening the activity of the circulation, and producing sleep; while, at the same time, it invigorates the powers of digestion. The change of air acts beneficially much in the same manner as it does in hooping-cough, only it is more generally applicable in child-crowing, is attended with less risk, and is more speedily and certainly efficacious.

"The plentiful use of cold water in the form of sponging was rarely omitted night and morning. In the treatment of the severe and alarming case (VII) in particular, this was found of service, added to atmospheric exposure, as a means of allaying a remarkable degree of irritability.

"Inflamed gums were scarified, and the operation repeated on a return of pain and heat, perhaps every second or third day. A sabre-pointed, rather blunt penknife, was the instrument preferred. In order to its safe performance, there is a precaution worth mentioning. An infant under the disease is irritable, apt to cry vehemently, and so to bring on a spasm. Let the operator proceed at once to pull back the head, and deliberately scarify the gum, and the almost certain consequence will be either a fit of spasm or a convulsion. The precaution referred to consists in gently drawing back the head, and that is sure to produce crying; then letting alone for a little, and again repeating the feint, until there has been free sonorous crying. Now the excess of irritability being expended scarification can be safely performed. The same precaution is applicable in forcibly administering medicines by the spoon. A sudden incautious attempt to give medicine in Case X produced a convulsion." D. F. C.

Art. XVI.—*Cases of Vesico-Vaginal Fistula, treated by Operation.* By Geo. Hayward, M.D. (From "Boston Med. and Surg. Journ.") Boston, 1851: 8vo. pp. 21.

Dr. Hayward's first operation for vesico-vaginal fistula was performed in May, 1839, and an account of it was published in the No. of this Journal for August of the same year. He has since operated frequently, and has met with such satisfactory results as to be induced to give his experience on the subject. He has operated twenty-six times on nine patients—one being operated on six times, another five, two twice, and five once. In three cases the operation was entirely successful; in five the patient obtained great relief, so that the urine could be retained for a number of hours without any escape through the fistulous opening; and in the remaining two, no benefit was derived from it. This is a degree of success highly creditable to the skill of this distinguished surgeon.

Dr. H. gives the following details of his mode of operating, and of managing the patient afterwards:—

"Before the discovery of the anæsthetic powers of ether, I found that the most difficult and painful part of the operation consisted in bringing the bladder down to the os externum. It is now done with comparative ease, and without causing the slightest suffering to the patient. I have administered the ether in the three last operations of this kind, and have been able to bring the bladder down, pare the edges of the fistula, introduce the ligatures and the catheter, and restore the bladder to its place, in twenty minutes; when in all the cases before, in which I did not use it, the same process required an hour, and during the most of that time the patient was suffering severely. Besides, the fistula is sometimes in such a situation, as when it is near the fundus of the bladder, that without this agent, or some similar one, it would be impossible to bring it in view.

"The patient being thoroughly etherized, the bladder can be brought down by introducing a large sized bougie (one made of whalebone, highly polished, is to be preferred) into the urethra, to the very fundus of the bladder, and carrying the other end up to the pubis. In this way the fistula is readily brought in sight. Its edges can be pared with the scissors or a knife, though usually both these instruments are required; and this part of the operation is much facilitated by holding the edges by means of a double hook. In all the cases that I have examined, these edges are thick, hard, and usually of a white colodr. It is not difficult, therefore, to dissect up the outer covering from the mucous coat of the bladder to the distance of two or three lines. The needles are then to be passed through the outer covering only, and as many stitches must be introduced as may be found necessary to bring the edges of the fistula in close contact.

"Since my first operation, I have used a short needle with the eye near the point, made to fit on to a long handle. The instrument, when the two parts are together, looks not much unlike a tenaculum, though not so much curved, and considerably broader near the point.

"As soon as the needle is passed through one side of the fistula, it is immediately seized by a forceps, the handle is withdrawn, and the needle is then carried through. It is to be then again fitted to the handle, and carried through to the other side in the same way. As many stitches as may be thought necessary to bring the parts into close contact can in this way be taken with great ease. One thread of each stitch is to be cut off; it is convenient to leave the other, as it enables the operator and patient to know when the ligatures have separated from the bladder.

"A large-sized female catheter is then to be introduced into the bladder, and secured there by means of a T bandage. The patient should be laid on her side, with the upper part of the body somewhat raised, so as to facilitate the flow of water through the catheter. This should be removed at least once in every twenty-four hours, as it is very likely to be obstructed by mucus, coagula of blood, and occasionally calculous concretions. In three days I think it safe to remove it altogether, but then it should be introduced at least once every three hours, for ten or twelve days more, so as to prevent any accumulation of urine in the bladder, and consequent strain on that organ.

"The diet should consist entirely of liquid, mucilaginous food; such as an infusion of slippery elm, gum Arabic and water, flaxseed tea, arrowroot, and milk and water. This diet, in my opinion, should be continued till the ligatures come away.

"The bowels should be opened by some mild laxative a few hours before the operation; but it is desirable that they should not be moved again till some days after.

"I think it best for the patient to use the catheter once or twice a day for several weeks, and at any rate during that time to avoid making any strong efforts to expel the urine by the contraction of the bladder.

"It may be proper to add, that I have never had any troublesome hemorrhage from the operation, nor any alarming symptoms after it. In some cases the pain has been severe for two or three days, and once or twice it has run down the limb, apparently in the course of the sciatic nerve. When performed in the way that I have recommended, I believe it to be attended with very little if any danger, as the bladder is not subjected to any considerable degree of violence, nor any part injured to a great extent."

Art. XVII.—*Practical Remarks on the Treatment of Aneurism by Compression.* By Jolliffe Tufnell, M. R. I. A., Surgeon to the City of Dublin Hospital, &c. Dublin, 1851. John Fannin & Co.: 8vo. pp. 154.

It is with unfeigned pleasure that we introduce to our readers this valuable practical work. It consists of observations made at various times at the City of Dublin Hospital, upon a case selected as a subject of clinical instruction for the class in attendance at that institution, which Mr. Tufnell has been induced, by request, to systematize and print, in the hope that, by concentrating practical information, it may be the means of lessening the prejudice which still seems to exist against the treatment of aneurism by compression, and procure for it a more general adoption.

Our author sets out with first detailing the case, which was that of a man labouring under femoral aneurism, who had previously been the subject of this disease in both popliteal vessels, and who, upon all three occasions, was speedily cured by compression. He then, after a brief history of compression, notices its efficiency in the treatment of aneurism, points out the principal features connected with the treatment of the disease in question, by this method, dwells somewhat upon the practical particulars which must be attended to in conducting this mode of cure, and, lastly, gives a full and valuable *resumé* of the cases which have been treated in Dublin by that method, and contrasts the results furnished by it with those obtained by the treatment with the ligature.

The application of pressure for the cure of aneurism, applied either to the tumour itself, or to the vessel leading to it, it is well known had been practiced, both in Great Britain and upon the continent of Europe, long previous to the year 1820; it was then done, however, with the view of curing the disease by producing such an amount of inflammation in the coats of the vessel as would produce their adhesion. It was not until the year mentioned, that it was employed with any other design, when Mr. Todd, of the Richmond Hospital, Dublin, adopted compression with other views. He used it as a preparatory course to the operation, in order that, "by compressing the principal artery for a few hours every day, mortification of the limb might be prevented, by allowing some progress to be made in establishing the collateral circulation, at the same time *not altogether without hope* that, by diminishing the current of blood in the trunk of the artery, so as to favour the coagulation of the contents of the sac, a cure without operation might be effected." The case proved a failure, but Mr. Duggan, in the next case in which it was tried, in 1824, succeeded, by the use of Todd's instrument, an apparatus resembling somewhat a common femoral truss, in curing a femoral aneurism in less than two months—the patient living upwards of twenty years afterwards. In the following year another case was tried by Mr. Todd, and was successful. Mr. Todd soon after died, the case was not published, and the fact of its mere occurrence in the hospital, says Mr. Tufnell, *made no impression on his colleagues*, and did not establish compression as an ordinary and fixed mode of cure. In 1842, Mr. Hutton had a patient with external aneurism in the same hospital, who declined to submit to the operation by ligature, and from this cause, he resolved, with the approbation of his colleagues, to attempt the cure by compression, a mode that he knew, from general reading, had from time to time been resorted to before, but which he was not aware, until informed by Mr. Adams, had been successfully put in practice by Mr. Todd, nearly twenty years before. The instrument of Mr. Hutton consisted of a circular iron hoop, through one side of which runs a screw, terminating in a pad, which is intended to press directly upon the vessel as it passes over the pubis. In the following year, Mr. Cusack adopted the same means successfully, using for the purpose the instrument which Crampton had invented for compressing the femoral artery in a case of secondary hemorrhage. The next case was that which occurred to Dr. Bellingham in 1843, who, by a similar instrument, produced the consolidation of a large popliteal aneurism in less than forty-eight hours, and so impressed him with the superiority of compression over deligation of the vessel, that he determined to study out the mode of cure, and to establish, by facts, its general adoption.

In a notice of the tract of Dr. Bellingham, on the employment of compression in aneurism, published in this Journal for July, 1847, we expressed the opinion that too much praise could not be awarded to the Dublin surgeons for the reintroduction of the treatment by compression for the cure of aneurism; and that of this praise, no mean share belonged to Dr. Bellingham; and we rejoice to see a fellow-citizen, and worthy co-labourer in the same cause, thus award to him his due meed of praise. "No labour, no pains were spared; steadily he noted every particular; slowly he gained his data; but surely he did his work. Night after night the Surgical Society of Ireland saw him the champion of compression, not vauntingly throwing the gauntlet, but proving its merits, he maintained its right against all comers. His sound and matured opinion was received with confidence by the profession in Ireland. Case upon case was recorded, establishing the views which he advanced. To him, therefore, I think we must concede *the chief credit—the palm of praise.*" Since Dr. Bellingham's case, the only decided improvement in the treatment of aneurism by compression has been in the kind of instrument employed, and for this we are indebted to Dr. Carte, who substituted an elastic medium for the dead, unyielding screw.

In the opinion of our author, there are, on mechanical principles, two instruments only which deserve attention. These are, either a free weight applied upon the artery where superficially placed at the groin, or the instrument in which an elastic force has been introduced. The form of mechanical arrangement for bringing this force into operation, may be varied in a thousand ways, but the principle, the elastic medium, should be employed.

The weight should be of a conical form, averaging from six to ten pounds, with a small oval pad attached to its smaller end. This is to be laid over the artery in the groin, and retained there by the patient's hand, the leg being semiflexed, in order to relax the fascia. The weight, which Mr. T. considers a most efficient means of controlling pulsation, is only objectionable on account of its being applicable to one spot alone on the artery, viz., that where it covers the pubis.

Of the instruments constructed on the elastic principle, two forms are required—one for the vessel at the groin, the other for that of the thigh; plates of which, together with descriptions of the mode of placing the patient and of applying the apparatus, are given. The necessity for constant supervision of the patient by an intelligent assistant, to guard against the rolling of the pad of the instrument in any movement, or other accident, is also dwelt upon.

Mr. Tufnell, though he admits that total obstruction to the direct flow of blood is not absolutely necessary for the cure of an aneurism, yet is an advocate for the employment of such a degree of pressure as completely to check the pulsation in the tumour to the touch, *though with the least amount of pressure that will produce this end*, believing that, in the majority of cases which have been rapidly cured, complete arrest of the circulation has been made, and that, in cases where the tumour could be carefully examined without disturbing the patient, he has invariably detected the flow of blood into the sac by applying the ear to the tumour, when *to the touch* not a thrill could be felt. The gentleness with which this compression should be made is much insisted on, and the author is particularly careful again and again to repeat that it is *not* to be by means of the dead compression of a screw.

During the whole treatment, if any uneasiness is felt by the patient, do not wait for him to make complaint of pain; the thigh apparatus (which should have been already loosely applied) is to be brought into play. Close attention is to be given to the points of pressure, and, if any irritation arises, the part should be sponged with cold water, and the weight substituted for a while; or in popliteal aneurism, the circular compress may be removed to the entrance to the canal in the adductor muscles. If the case progresses favourably after the application of compression, the first change of importance that occurs is in the outline of the sac, which becomes better defined; the *bruit* too is less distinct, the swelling pulsates less strongly, and the patient does not feel the sac distended by the influx of blood as plainly and painfully as at first.

When these symptoms occur, if the circulation has not previously been completely controlled, by now cutting it off altogether, a few hours will often suffice to produce consolidation in the sac. Sometimes, however, instead of the tumour remaining stationary, and gradually becoming harder, it is not solidified, but appears daily to decrease, seemingly as though the walls of the sac were to a certain degree collapsing, and this continues day after day, until eventually the aneurism becomes like a fibrous cord. In either case of recovery, however, whether quick or slow, the compression should not be at once removed on the cessation of pulsation, but continued in a diminished degree for forty-eight hours after all trace of it has ceased, in order to allow a pedicle of fibrine to extend itself into the artery.

Of the objections urged against compression, one is that the subsequent use of the ligature is interfered with in cases where that method cannot be borne, in consequence of the vein and artery being so injured as to render it dangerous subsequently to apply a ligature to the spot. That injury *may* be done Mr. Tufnell believes, but thinks it must arise from want of care on the part of

No.	Surgeon.	Sex.	Age.	Form of disease.	Where treated.	When treated.	Duration of compression.		Result.	Where published.	Remarks.
							D'ys.	*H'rs.*			
1	Hutton	Male	30	Popliteal	Richmond Hospital	Oct. 3, 1842	28	..	Cured	Dub. Med. Press, 1843	
2	Cusack	do.	56	do.	Steevens's Hospital	Jan. 17, 1843	31	..	do.	Dub. Journ. 1843	
3	Bellingham	do.	38	do.	St. Vincent's Hosp.	March 25, 1843	2	..	do.	Dub. Med. Press, 1843	Same individual as No. 5.
4	Harrison	do.	29	do.	Jervis St. Hospital	May 9, 1843	93	..	do.	Brit. Assoc. Rept. 1843	
5	Bellingham	do.	33	Femoral	St. Vincent's Hosp.	June 20, 1844	43	..	do.	Dub. Med. Press, 1844	Same individual as No. 3.
6	Kirby	do.	28	Popliteal	Jervis St. Hospital	July, 1844	53	..	do.	Dub. Med. Press, 1844	
7	Cusack	do.	26	do.	Patients' Residence	Nov. 15, 1844	7	..	do.	Dub. Med. Press, 1845	
8	Porter	do.	29	do.	Meath Hospital	Dec. 31, 1844	24	..	do.	Dub. Quart. Journ. 1846	
9	Cusack	do.	30	do.	Steevens's Hospital	March 12, 1845	20	..	Died of Disease of Heart	Dub. Quart. Journ. 1845	
10	Hutton	do.		do.	Richmond Hospital	June 23, 1845	21	..	Ligature applied	Dub. Med. Press, 1850	Artery tied and recovered.
11	O'Ferrall	do.	32	do.	St. Vincent's Hosp.	June 25, 1845	83	..	Cured	Dub. Quart. Journ. 1846	
12	Cusack	Female	40	Brachial	Steevens's Hospital	July 9, 1845	9	..	do.	Not published	Traumatic from gun-shot injury.
13	Porter	Male	20	Popliteal	Not stated	July 28, 1845	20	..	do.	Dub. Quart. Journ. 1846	
14	Macdonnell	do.	32	do.	Richmond Hospital	Nov. 1845	2	..	do.	Dub. Med. Press, 1846	Left femoral previously tied for popliteal aneurism of that side.
15	Cusack	do.	33	do.	Steevens's Hospital	Feb. 1846	43	..	do.	Dub. Quart. Journ. 1846	
16	Bellingham	do.	38	do.	St. Vincent's Hosp.	Feb. 10, 1846	..	..	Died of Erysipelas	Dub. Med. Press, 1846	
17	O'Ferrall	do.	37	do.	St. Vincent's Hosp.	April, 1846	11	..	Cured	Dub. Quart. Journ. 1846	
18	Humfrey	do.	43	do.	Royal Mil. Infirm.	Feb. 9, 1846	..	10	do.	Dub. Med. Press, 1846	Previous but ineffectual compression had been made.
19	O'Brien	do.	34	do.	Adelaide Hospital	Oct. 1846	72	..	do.	Dub. Med. Press, 1846	Interrupted pressure at intervals.
20	Bellingham	do.	34	do.	Patients' Residence	Feb. 1847	21	..	Pressure discontinued	Not published	The aneurism never increased. Is the same individual as No. 19, but on the opposite limb.
21	Smyly	do.	48	Femoral	Meath Hospital	April, 1847	70	..	Cured	Dub. Med. Press, 1850	
22	Humfrey	do.	31	do.	Royal Mil. Infirm.	July, 1847	..	33	do.	Dub. Med. Press, 1847	
23	Tufnell	do.	27	Popliteal	Patients' Residence	Nov. 5, 1847	6	..	do.	Dub. Med. Press, 1847	Same individual as Nos. 28 and 36.
24	Cusack	do.	30	do.	Steevens's Hospital	April 22, 1847	4	..	do.	Dub. Quart. Journ. 1847	Traumatic aneurism.
25	Orr	do.	27	Brachial	City Dublin Hosp.	Aug. 21, 1847	..	..	Ligature applied	Dub. Med. Press, 1848	High bifurcation. Two vessels secured. Recovered.
26	Fox	do.	30	Femoral	Military Infirmary	May 10, 1848	..	..	Amputation	Dub. Med. Press, 1848	Recovered.
27	Hutton	do.	34	Brachial	Richmond Hospital	July 22, 1848	12	..	Cured	Dub. Med. Press, 1849	Traumatic aneurism.
28	Tufnell	do.	28	Popliteal	Patients' Residence	Nov. 1848	42	..	do.	Dub. Med. Press, 1849	Same individual as Nos. 23 and 36.
29	Hutton	do.	32	do.	Patients' Residence	Jan. 3, 1849	..	7	do.	Dub. Med. Press, 1849	
30	Crampton	do	11	Radial	Patients' Residence	July 28, 1849	..	16	do.	Dub. Med. Press, 1849	
31	Banon	do.	27	Popliteal	Jervis St. Hospital	Sept. 1849	5	..	do.	Dub. Med. Press, 1849	
32	Clayton	do.	25	do.	Military Infirmary	March, 1850	..	39	do.	Not published	Same.
33	Clayton	do.	25	do.	Military Infirmary	April, 1850	..	..	Amputation	Not published	Recovered.
34	Read	do.	28	do.	Mercer's Hospital	Aug. 1849	..	..	Died	Dub. Med. Press, 1851	Died of diseased heart and lungs.
35	Hargrave	Female	22	Femoral	City Dublin Hosp.	July, 1850	20	..	Cured	Unpublished	
36	Tufnell	Male	29	do.	City Dublin Hosp.	Sept. 1850	13	..	do.	Unpublished	Same individual as Nos. 23 and 28.
37	Bellingham	do.	44	Popliteal	St. Vincent's Hosp.	Dec. 1850	..	23	do.	Unpublished	
38	Quigley	do.	32	do.	Artillery Hospital	Jan. 1851	..	..	Amputation	Unpublished	Recovered.
39	Colles	do.	29	Femoral	Steevens's Hospital	Feb. 1851	37	..	Cured	Unpublished	

the surgeon conducting the case, either in using improper instruments, or, having proper instruments, in letting them be improperly applied. Four cases are appended to show that in practice subsequent deligation of the artery at Scarpa's space has not been impeded by it, and the post-mortem appearances of those cases are given where compression has been used, in which death subsequently permitted the examination of the limb to prove that, when properly employed, no injurious effect is exercised either upon the vessels themselves, or those parts that become the subject of subsequent operation.

Another assertion that has been put forth is, that pressure as a mode of cure is ineffectual. In reply to this, Mr. Tufnell states the fact that, in a period of eight years, in all the hospitals of Dublin, and in private practice as well, the ligature for external aneurism has only been resorted to three times; in every other instance (thirty-seven cases), compression has been used, and almost with uniform success.

Along with this table of cases which he presents, the particulars of all those attended by unfavourable results are subjoined—a plan which cannot be too warmly praised, and one which, were it generally followed in surgery, would lead us to a more just estimate than is now had of the benefits derived from operative procedures.

The table on the opposite page contains thirty-nine cases of aneurism, which have been treated by compression, in Dublin, during the past eight years.

In 30 of these, the cure has been complete.

In one compression was discontinued, the aneurism not increasing subsequently in size.

In two the ligature was resorted to successfully.

In three amputation was necessary.

In one case death ensued from erysipelas.

And two died from co-existing disease of the heart.

At the close of his work, Mr. Tufnell contrasts the mortality attendant upon the treatment of aneurism of the lower limb by compression with that following the treatment by the ligature. Concerning this, it will be sufficient here to say that, from a paper quoted by him, contained in the No. of this Journal for October 1849, it appears that, out of one hundred and seventy-seven cases of ligature of the femoral artery for aneurism, thirty-eight died, and that nearly one out of every three cases operated on either terminated fatally, or was to a certain extent maimed for the remainder of life. G. W. N.

Art. XVIII.—*The Pharmacopœia of the United States of America.* By the authority of the National Medical Convention, held at Washington, A.D. 1850. Philadelphia, Lippincott, Grambo & Co. 1851. 8vo. pp. 318.

In accordance with a usage which may now be considered as established, the lapse of another decennial period becomes the occasion of a revised edition of the National Pharmacopœia. The industry of the committee selected by the Convention to perform the task of revision and publication, has promptly given the work to the profession, by whom it has been awaited with considerable interest.

In point of dress, the volume has been produced in a very beautiful and substantial style, the paper being white and the type large. We notice one or two typographical errors; but they are of a character to be readily observed, and are none of them calculated to mislead. While acknowledging, however, the abstract excellence of the present edition, we very much doubt whether the publishers have chosen the form best adapted to meet the public wants and interests. A work, which, if appropriately printed in a small or medium-sized letter, would form but a thin 16mo. or duodecimo manual, cannot be expanded with elegance or advantage into a super-royal octavo volume: and whatever superior dignity may be supposed to attach to the latter size, or whatever greater legibility secured by its pica type, or whatever better pretext afforded by its cubic inches for an exorbitant price, certain it is that its circulation is very seriously restricted, and its consultation (when possessed) in no trifling degree impeded by such an arrangement. True, "it has always been so;" but this is no reason for its continuing to be so.

We are informed that this size is rendered necessary by the high price paid for the copyright. But this imposition of a tax—altogether profitless, and often prohibitory—is a great wrong to the medical and pharmaceutical professions, and through them to the public at large. The book should be burdened only with its expenses; and every encouragement presented to its universal adoption as the sole standard of designation and of preparation.

It is a melancholy fact that a very large portion of the regular medical profession seems to be almost in the condition of a druggist of a neighbouring city, who, when asked if he had yet seen the new Pharmacopœia, inquired, in ingenuous surprise, what it was! We believe that very few physicians adhere carefully to the technicology of the Pharmacopœia in writing their prescriptions; although this claims the authority and exhibits the deliberate and combined wisdom of the entire profession. On the contrary, each one seems disposed to illustrate his independence by adopting what he may think the clearest or the shortest designation, almost without reference to a common standard, and apparently regardless that his order for medicine is addressed to any one of a numerous and scattered fraternity. It is but the other day that our newspapers gave us an account of a physician's prescription in which the universally familiar *Oleum Ricini* was metamorphosed, by the writer's etymological idiosyncrasy, into the unheard of *Oleum Resini*, which, by an apothecary's heedless construction, resulted in the death of the patient! Nowhere is a uniform language so all important as in the prescription of medicines, often the messengers of life or death! And in no way can this uniformity be obtained, except by a common authority, universally recognized and rigidly observed. Could the Pharmacopœia be published at a lower price, and in a neater and more convenient form, there can be no doubt that it would have a much wider and a much more beneficial influence; that it would be more likely to become what it should be—the Physician's "*Vade Mecum.*"

Internally, the new Pharmacopœia exhibits the evidence of a careful and minute examination; and, whatever difference of judgment may exist in regard to minutiæ, of the general execution and character of the work there can be but one opinion. It is worthy to take its place beside the similar publications of any other nation.

In its general plan, there has been no change from the preceding edition (that of 1840), "as in the opinion of the committee no arrangement could be devised better calculated to present the subject in its various details, in a clear, convenient, and impressive manner." It is a matter for congratulation to observe that, after the fullest reconsideration, so little change of nomenclature has been found necessary; and the fact forms a pleasing evidence of the general accuracy attained in the former revision. Upwards of forty names were changed in the edition of 1840; while, in the present edition, we believe the number does not exceed half that amount. The number of substances and preparations of the old Pharmacopœia rejected in the new, amounts but to five; while the number dismissed in 1840 was thirty-four. The new drugs and medicinal preparations introduced amount to seventy; and the list forms a valuable accession to the officinal "armory." Among them we notice Chloroform, Collodion, Glycerine, Powder of Iron, &c., and an entirely new class of "Fluid Extracts," a series of elegant preparations, convenient of administration, concentrated in strength, and very faithfully representing the medicinal properties of the substances employed. We notice with pleasure that the "Syrupus Acaciæ," dismissed in 1840, has been restored to its place in the present edition. It is often a very desirable adjuvant. The number of new articles introduced in the edition of 1840 was one hundred and twelve; a considerably larger number than that of the present one.

The general arrangement of the subjects into two classes, the "Materia Medica," and the "Preparations," although a sufficiently obvious distinction in a majority of cases, is, when closely examined, found to be more formal than substantial. It is true that this system is now tolerably well established, both by previous custom, and by the example of most Pharmacopœias; still we know of no good reason why the various preparations of a substance should not be grouped together immediately after the article from which they are obtained. The distinction between the materia and preparations—even on the grounds indicated in the preface—"the former enumerating and defining medicines as they are derived from nature or furnished by the manufacturer, the latter containing formulæ or rules by which they are prepared for use," is often very obscure, not to say fanciful. The accident of locality, or the extent and character of production, become the leading principle of classification, so that a nice calculation of per centage in profit may perhaps be the sole criterion between a "materia" and a "preparation." We notice that (from some such a subtle consideration no doubt) the *Oil of Cloves*, and the *Oil of Cubebs*, formerly belonging to the materia medica, are now considered preparations; while *Acetic Acid* has been transferred from the latter to the former head. It certainly does not seem a very scientific arrangement to include the Oils of *Almond*, *Bergamot*, *Cinnamon*, *Lemon*, *Nutmeg*, &c., in one department, and the Oils of *Anise*, *Clove*, *Lavender*, *Sassafras*, *Valerian*, &c., in another; nor are the reasons for such a division very obvious. Again, *Sulphur Lotum* (included in the materia medica) is certainly a preparation, as it is very rarely met with in commerce, and must generally be prepared by the pharmaceutist. On the other hand, *Quinia*, *Morphia*, and the alkaloids generally, seem naturally to fall within the definition of materia medica; since these substances, or their salts, exist in nature, and are produced by the manufacturer and not by the druggist.

This incongruity is noticed in the Preface, and is thus explained: "Among the preparations will be noticed several substances which are now seldom made by the apothecary, being obtained almost exclusively from the manufacturing chemist. They have been retained in their present position, because, in our widely-extended country, circumstances may not unfrequently render it desirable that the apothecary should be able to prepare them in the absence of a due supply; and, though the processes might not have been introduced if now claiming admission for the first time, yet having a place already in the Pharmacopœia, it has not been deemed advisable to omit them, and transfer their products to the Materia Medica. The circumstance that these substances are placed among the preparations, does not preclude their purchase from the manufacturer when they can be procured of the proper quality." This concession—as it seems to us—is virtually a surrender of the principle adopted as the basis of arrangement; and a practical negation of the sentiment before expressed when adverting to the classification into Materia Medica and Preparations, that "the propriety of such a division is too obvious to require comment."

On the whole, we think the distinction entirely artificial, and the separation attended with no practical advantage: while it not unfrequently involves the inconvenience of a double reference before an article is found.

In the department of "Preparations" in the new Pharmacopœia, we notice several desirable alterations: "many of the processes have been amended, replaced by others, or altogether omitted;" and the amendments are generally characterized by increased precision, and minuteness of detail. Thus, instead of simply designating "Peruvian Bark" for the Tincture, Infusion, &c., as formerly—the kind of Cinchona is specified, whether Red, or Yellow. This is an improvement of no slight advantage in view of the importance of having a uniform preparation. Instead of the *Extractum Cinchonæ* of 1840, we now have *Extractum Cinchonæ Flavæ*, and *Extractum Cinchonæ Rubræ*. The propriety of having two preparations scarcely distinguished from each other may perhaps be doubted. We think the latter extract might very well have been dispensed with.

We observe that in the Materia Medica list, the indefinite term *Cinchona* has been retained; although all the varieties used—the *Flava*, the *Rubra*, and the *Pallida*—are afterwards specifically mentioned, and separately defined. The circumstance of an article holding the incompatible relation of being ostensibly co-ordinate with others which are really its divisions, is certainly an anomaly.

We believe there is no other instance in the book in which a generic term is thus employed. *Cinchona* is not properly an article of the Materia Medica, nor is it used in a single preparation—thanks to the precision of the present Pharmacopœia.

In directing infusions, tinctures, &c., to be made by "displacement," the Pharmacopœia, very unnecessarily as it appears to us, reiterates at each preparation the whole process of operation. The direction looks very much as if it had been stereotyped. It would have saved considerable space, and we think would have detracted nothing from the perspicuity or utility of the work, if a full exposition of the method had been given once for all, at the head of the preparations; and merely the quantities and time of maceration had been stated (when necessary) in individual cases.

With an allusion to one more point, we shall close our notice. "It will be observed that the Latin names are generally used in the singular number, even though the idea of plurality may be essentially connected with the medicine. Thus *Cantharis*, *Caryophyllus*, *Ficus*, *Galla*, *Limon*, &c., are used instead of the plural of these terms respectively; and in reference to the names derived from the part of the plant employed, the same plan is mostly followed, as in the case of *Stramonii Semen*, *Colchici Semen*, &c. In this the example of the Roman medical writers, particularly of Celsus, has been followed. The leaves, however, are expressed in the plural, as *Stramonii Folia*, &c., which is also in accordance with the practice of the same classical author. In the use of English names, it is not deemed necessary that they should be literal translations of the Latin terms; but that title is preferred, which custom and the genius of the language seem to sanction. . . . . We may correctly say *Caryophyllus*, *Galla*, *Prunum*, and *Rosa;* but the genius of our language requires that we should translate these terms *Cloves*, *Galls*, *Prunes*, and *Roses*."

If we may venture to differ from such respectable authority on a point of some nicety and importance, we think this idea is founded in a mistake. However common the terms *Cloves*, *Galls*, *Prunes*, &c., may be in ordinary language, we believe that a close consideration will discover them to be decidedly unphilosophical as applied pharmaceutically. The idea embodied in the title of a remedial agent has no reference whatever to numerical character as indicating one or more—but regards solely the abstract quality of the substance. The designation, therefore, to be appropriate, should be abstract, and not concrete. By the universal genius of language, a plural term cannot be abstract: it indispensably involves the idea of two or more individuals conceived separately, even while contemplated collectively. Thus "men" must mean specific individuals; while "man" may abstractly express the sum of all the qualities constituting human nature.

In like manner the oil secreted by a single rose-leaf is as truly and entirely *Oleum Rosæ*, as that from all the Orient. But it certainly is not "Oil of Roses." Just as rational and just as necessary would it be to say "Oil of Cod-livers" or "Oil of Flaxseeds." Popular usage should not be suffered to vitiate the precision of a technical nomenclature. We therefore think that it would have been a most desirable and praiseworthy reform to have abolished the family of plurals *in toto*—however uncouth this change might occasionally appear until justified by scientific use. A. B. T.

QUARTERLY SUMMARY
OF THE
IMPROVEMENTS AND DISCOVERIES
IN THE
MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the separate course of Sensation, Volition, and the Involuntary Power from and to the Brain, the Oblong Medulla, and the Spinal Cord.* By Joseph Swan.—The oblong medulla may be divided into four principal parts. The anterior central part forms the pyramidal bodies; these, with the crura of the brain, give origin to several motive nerves, and may be called the voluntary tract. The posterior surface forms a layer which contains the floor of the fourth ventricle, and forms a bed for the origin of the auditory nerve, and a great portion of the fifth; this may be called the sensitive tract. Between the two preceding tracts there is a large ganglion or case, filled with gray and white matter; and this may be called the involuntary tract. Besides these, there are at the sides the restiform bodies, principally derived from the cerebellum; but it is not intended further to notice them.

The sensitive tract in the oblong medulla is a layer of moderate thickness. It passes upwards as far as the nates, and then obliquely across and underneath these to the inner and posterior margin of the thalamus; it here forms a cord as thick as a swan's quill. It passes outwardly across the thalamus, underneath the optic tract; it sends off a layer of wavy tracts or lines underneath the epithelium of the posterior and descending horns of the lateral ventricle, and is then intermixed with the white matter of the posterior lobe of the brain.

The voluntary tract, after forming layers in the annular tubercle, and combining with the inferior pedicle of the cerebellum, forms the external portion of the crus of the brain, especially that bounded by the involuntary tract and the black matter. The larger part of it passes upwards, communicating freely with the middle and broad portions of the striated body, in its course to the white matter leading to the great commissure and the convolutions of the brain.

The involuntary tract forms, in the oblong medulla, between the sensitive and voluntary tracts, a broad and thick triangular and somewhat heart-shaped ganglion or case, having partitions filled with gray and white matter; below, it sends processes downwards, to pass at the bottom of the longitudinal fissure between the two anterior quarters of the spinal cord. Opposite the crura of the brain it divides into two portions, each of which is a cylinder, containing pouches filled with gray and white matter. On arriving at the thalamus, each passes outwardly and anteriorly to the sensitive tract; at this part the cylinder forms a distinct ring, from which the involuntary tract is continued across the thalamus, between the sensitive and voluntary tracts; and, after communicating with the narrow end of the striated body, becomes combined with the white matter leading to the great commissure and the convolutions of the brain.

In the horse, ox, pig, and sheep, the sensitive tract passes from the posterior surface of the oblong medulla nearly as in man; it forms an expansion underneath the epithelium lining the posterior horn of the lateral ventricle, and the rest is combined with the white matter corresponding with that in the posterior lobe of the brain in man.

The voluntary tract in animals is very similar to the same in man, except that it undergoes a more simple change in the smaller annular tubercle on becoming combined with the inferior pedicles of the cerebellum.

The involuntary tract in animals is a most curious and interesting structure. It is firmer than any other part of the brain, and, in external appearance, very much resembles a ganglion of the sympathetic nerve. It begins in the thalamus, at the ring by which the soft commissures communicate. It is surrounded by the third ventricle, and its continuation downwards lies beneath the passage from the third to the fourth ventricle. In the fourth ventricle it lies immediately underneath the central part of the sensitive tract. At the ring it forms a large, round, or oval case of white matter; this is composed in the centre of oblong cells, plainly distinguished by the naked eye in the horse; and into these the gray matter of the soft commissure enters for connecting their two sides. The ring is very large in the horse; it is connected to the nucleus of the white matter of the brain anteriorly, and with the tænia, and through this with the sensitive tract. From the posterior and outer side of this case white fibres pass off, which go through the narrow end of the striated body to the white matter leading to the convolutions; these fibres correspond with the same termination of the involuntary tract in man. Both sides of the lower end of the case become concentrated in a large ganglion of the size of half a swan's quill; this is soon joined by a similar ganglion from the opposite case. The ganglion thus formed contracts to the size of a goose's quill; it then enlarges again in the oblong medulla, and assumes an oblong and pyriform shape, the narrow end being continued into the spinal cord, where it lies in the bottom of the longitudinal fissure formed by the two anterior quarters. The case and ganglions communicate by numerous fibres, especially laterally, with the contiguous parts of the brain, and with the oblong medulla and spinal cord. In the ox the case and ganglia are similar, but less. In the sheep they are also similar, but less than in the ox. In the pig the same parts are also similar; the ganglia are not quite so large as in the ox, and are less oval in shape. This large ganglionic mass appears as if it were the source of vital power—for giving energy to all the other parts—for exciting involuntary action constantly in some parts through the fibres it sends through the narrow end of the striated body—and for calling into action all the other parts, when any necessity arises for their assistance.

This brief paper is the result of very numerous dissections, and is an outline of my very constant occupation for many months.—*London Medical Gazette*, Feb. 1851.

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2. *New Muscular System discovered in the Mucous Membrane of the Stomach and Intestines.* By Ernst Bruecke, Prof. Phys. Univ. Vienna. (Communicated by Prof. Van der Byl.)—At a meeting of the Imperial Academy of Sciences of Vienna, held on the 13th February, 1851, Professor Bruecke communicated his discovery of a muscular system in the mucous membrane of the stomach and intestines. In examining the intestinal villi of fowls, geese, dogs, and human subjects, with reference to the origin of the chyle vessels, he met with a system of longitudinal fibres, which in their morphological characters were found by him to correspond exactly with organic muscular fibres. He now remembered that, already in the years 1842 and 1843, Lacauchie, Gruby, and Delafond (from observations made by Lacauchie on recently killed animals, and by Gruby and Delafond on living ones), attributed a power of motion to the intestinal villi—and therefore sought to convince himself of the correctness of this statement.

After narcotizing a dog, according to the method proposed by Professor Ludwig of Zurich—by injecting a strong solution of the diluted alcoholic extract of opium into the jugular vein until the animal was entirely insensible—Professor Bruecke laid open the abdominal cavity by cutting through the linea alba, and then opened the small intestine in several places. On now drawing a thin blunt probe very lightly, but somewhat rapidly, across the mucous membrane, he distinctly saw the villi which had been touched shortening and thickening themselves. Professor Bruecke did not see them become long and slender on irritation, as Gruby and Delafond pretend also to have observed; and he doubts this change of shape as an active condition, since he was unable to find any circular fibres in the villi. Nor did the lateral motions take place, as described by Gruby and Delafond; but he does not deny their possibility, since they might be produced by the fibres on one side of a villus contracting, while those on the other side remain relaxed.

Professor Bruecke, now no longer doubting the nature of the fibres observed by him, sought to investigate their extent and attachment in the intestinal canal of human subjects and dogs, and found that in the villi he had observed only the most remote tendrils (Ausläufer) of an expansive muscular system which extended through the mucous membrane of the stomach and intestines.

The principal layer of this muscular system is situated in the stomach below the pepsin glands—in the small intestine, below the Lieberkühnian follicles—in the great intestine, below the glandulæ tubulatæ (simplices minores of Böhm), and consists of an external layer of longitudinal and an internal layer of circular fibres. Situated on the inner surface of the latter (or internal) layer, we have an irregular meshwork of these fibres, which surround the basis of the above-named glands, and pass between them to reach the very surface of the mucous membrane, where they are only covered by the epithelium, basement membrane, and capillary vessels. It is to this meshwork and *its tendrils* that the villi owe their contractile powers.

Note by Dr. Van der Byl.—In sending this communication, I may add that, through the kindness of Professor Bruecke, I have had an opportunity of examining this new muscular system in the stomach and intestines, and convincing myself of the contractile power of the villi. The following remarks may perhaps aid those who are willing to repeat the observations described in this paper:—

1. *To observe the Contractions of the Villi.*—The intestine being slit open, we must not rest disappointed if the contractions do not take place immediately. In the last dog experimented on by Professor Bruecke, the contractions of the villi became strongest about a quarter of an hour after the internal surface of the intestine had been exposed to the air; and, indeed, they may not set in until twenty minutes or half an hour after they are laid open. The contractions are not to be expected where the surface is granular (for here the villi are already contracted, as we may see from their thick round apices); on the contrary, the florid velvet-like surface, covered by a thin layer of transparent mucus, will exhibit the contractile power of the villi most satisfactorily.

2. *To demonstrate the Muscular Fibres in the Fresh Villi.*—Remove a few villi from the intestinal surface, and spread them out on a glass (dissecting them a little, if necessary). On examination with the microscope, we usually find some broken through, and see the fibres hanging from the broken extremity. With a high power, we can then examine the fibres individually.

3. *To demonstrate the Layers of this Muscular System.*—For this purpose it is necessary to boil the stomach and intestines in dilute acetic acid, or common vinegar, after the manner proposed by Purkinje, many years ago, for other purposes. When the organs are very thin, we wait until the acid boils, and then dip them in for a few minutes;—thick organs, however, are put in when the acid is placed on the fire, and removed as soon as it boils. After such boiling, the stomach and intestines are spread out, and allowed to dry moderately. When too dry, they become very brittle, and it is then extremely difficult to get good sections. Since the layers are comparatively very thin, for their better observation the sections should be made obliquely, not perpendicularly, to obtain a greater surface.—*Monthly Journ. Med. Sci.*, April, 1851.

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3. *Experiments on the Pancreatic Fluid of the Calf.* By M. J. L. Lassaigne.—Since it has been shown that the pancreatic fluid extracted from the dog enjoys the remarkable property of making an emulsion with oil, and of causing its transformation into fatty acids, either at ordinary temperatures or at the temperatures of the bodies of mammalia, it has become matter of interest to submit

to similar experiments the pancreatic fluid obtained from a large herbivorous animal, with the view of ascertaining if it acts in the same manner.

M. Colin, director of the anatomical department of the school of Alfort, having procured some of it, by the method shown to him by M. Bernard, and which he had successfully put in practice with the dog, a small quantity was sent to M. Lassaigne, which he immediately examined.

The pancreatic fluid of the calf, which has an amber yellow colour, is inodorous, is transparent and limpid, and possesses a tolerably marked saline taste; when tested with reddened litmus paper, it restores the blue tint. Heated, it becomes opalescent and turbid, and deposits some coagulated white flakes, which attach themselves to the sides of the vessel in which the experiment is made.

The small quantity at the author's disposal not permitting of a direct analysis, he thought it right to examine, in concert with M. Colin, the action which it exercises on oils.

For this purpose he divided it into several portions in glass tubes, and added to each portion a drop of pure olive oil. The agitation to which he subjected the tubes formed no emulsion—the oil separating speedily, and floating on the top.

The prolongation of the experiment did not produce any effect, even after eight hours of contact at a temperature of 60° Fahr., the oil having remained neutral, and the liquid preserving its primitive alkalinity. Subsequently exposing these same tubes in a salt-water bath to 100° Fahr., and keeping up this temperature for fourteen hours, produced no change in the properties of the oil, or in those of the pancreatic juice subjected to the experiment.

This result is opposed to that obtained from the pancreatic juice of the dog,—is it constant in the herbivorous animal, or is it an exceptional occurrence due to an alteration in the pancreatic juice of the animal, caused by the painful operation to which it had been subjected? The author does not admit the latter hypothesis, seeing that the animal survived, and did not appear to suffer in health.—*Monthly Journ.*, May 1851, from *Journ. de Pharmacie*, March, 1851.

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4. *Further Experiments on the Pancreatic Juice of the Dog.* By M. J. L. Lassaigne.—We know, from the interesting experiments of MM. Bernard and Barreswil, that the pancreatic juice possesses the remarkable property of forming an emulsion with fatty bodies, either vegetable or animal, and of transforming them into fatty acids and glycerine, at the temperature of from 95° to 100° Fahr.

M. Bernard, in subsequently repeating, at the school of Alfort, along with M. Colin, the process by the aid of which he obtained the pancreatic fluid from animals, remitted to M. Lassaigne a portion of this juice, which he had extracted himself from a dog of middle size.

The experiments to which he submitted it allow him to add some facts to those already known, and of which the principal may be stated in the following propositions:—

1. The action of the pancreatic juice upon oils is produced even at the temperature of 53° to 60° Fahr. in some hours. In fact, on moistening several points of blue litmus paper with the emulsion produced by the olive oil and pancreatic juice, the moistened portions of the blue paper reddened shortly, from the circumference to the centre, on exposing to the air; and to produce this effect, it was not found necessary to leave the mixture during twelve or fourteen hours at the temperature of the bodies of mammalia, as has been advanced by the authors quoted above.

2. The mixture of the pancreatic juice and oil becomes acid at ordinary temperatures, as the author has ascertained after an experiment of similar duration.

3. This acidification is produced in oxygen, air, hydrogen, nitrogen, and carbonic oxide gases; the air does not seem to participate in this singular change, which is perhaps due to a force of the same nature as that designated, by Berzelius, "catalytic force," to explain certain reactions in organic and inorganic chemistry.

4. The pancreatic juice can preserve its alkalinity and property of acting on oil for several days.

5. Under the same circumstances in which the oil is modified by this fluid, sugar and gum undergo no alteration, a circumstance which points out the speciality of the action which it exercises on fatty bodies.—*Ibid.*

5. *Absence of the Sternum in a Child aged Eleven Years.*—An instance of this rare deformity is related in the *Zeitschrift für die Gesammte Medicin.*, by Dr. LOUIS BENJAMIN. The sternum was replaced by two long narrow cartilaginous bands, commencing at the clavicle, and extending to the level of the seventh pair of ribs. Between the two bands was a space occupied solely by the soft parts, and which was perceptibly elevated at each systole of the heart. The child's health was remarkably good, and the respiratory functions were performed as in health.—*Prov. Med. and Surg. Journ.*, May 28th, 1851.

6. *Total Absence of Uterus.*—Dr. ZIEHL records (*Medicinisches Correspondenz Blatt*) an example of this in a woman fifty-seven years of age, who had been married at thirty two, and until the latter years of her life had enjoyed excellent health. She had never menstruated, but had at times a mucous discharge from her vagina. Her body was well formed, breasts well developed, her voice and manners those of her sex. Coitus had never been completely accomplished, and she was indifferent to it. She died of phthisis.

On examination, not the slightest trace of a uterus could be found. The external organs were well developed. The vagina was so contracted as scarcely to admit the index finger, and terminated at the extent of an inch in a cul-de-sac. The Fallopian tubes were in the broad ligaments; the fimbriated extremities were normal; the abdominal opening of the tubes was open; there was no uterine opening. The ovaries were firm and dry, puckered on their surface, and containing in their interior small compact protuberances.—*Gaz. Méd. de Paris*, Jan. 4, 1851.

7. *On the Parovarium of the Female, the Analogue of the Epididymis in the Male.* By Professor KOBELT.—The *Wolffian* bodies are generally believed to be peculiar to intra-uterine life, and to disappear in both sexes without leaving any trace of their existence. The author, however, affirms that it is possible to demonstrate anatomically, that these organs in both sexes, generally regarded as temporary, continue throughout life, and that they do not begin to waste until after the cessation of the generative functions. The following paragraphs contain the pith of this interesting essay:—

1. In the earliest periods of intra-uterine life there is no distinction of sex, the elements of both sexes in fact existing in every individual.

2. The "generative gland" may become either a testicle or an ovary.

3. By means of the excretory ducts of this gland, that is to say, by the *canal of Müller* in the female, and the excretory duct of the *Wolffian body* in the male, each embryo assumes the attributes of one or the other sex.

4. The sexual difference consists in the development of one of these ducts, and the arrest of development in the other.

5. In the male, the Wolffian body does not disappear entirely, but it constitutes in chief part the epididymis; its cul-de-sac forming the *coni vasculosi* of the epididymis.

6. The superior culs-de-sac of the excretory duct of the Wolffian body become effaced, or converted into hydatid vesicles. The inferior culs-de-sac also disappear, or are converted into *vaso aberrantia Halleri.*

7. The excretory duct of the Wolffian body forms the canal of the epididymis and vas deferens.

8. In the female the Wolffian body never entirely disappears, but it contributes to the formation of a new body, discovered by Kobelt, and called by him the *parovarium.* This body is placed between the ovary and the Fallopian tube.

9. The culs-de-sac disappear or become *coni vasculosi* as in the male, others become the vesicles so often observed in the fringes of the Fallopian tube; others, again, the inferior ones, disappear altogether.

10. The excretory duct of the Wolffian body is arrested in its development. The duct of Müller becomes the Fallopian tube.

11. Hermaphrodism is caused by the persistence of all the elements of the generative tissues.

[In connection with the above we may append the conclusion respecting the Wolffian body, extracted from an inaugural thesis, by Dr. Follier:—]

The Wolffian bodies are developed in two distinct portions on each side of the spine, originating in special organic cellules, and not as an expansion of either of the allantois or of the vesicula umbilicalis. The generative gland (either ovary or testicle, as the case may be) is formed quite independently of the Wolffian bodies. These bodies are formed of tubes, at first straight, but afterwards becoming tortuous, and ending in an excretory duct. The excretory duct of the generative gland is developed independently of that of the Wolffian bodies, which bodies are not completely effaced at birth. In the female they persist partly in the form of small canals situated in the broad ligament, near the ovary, and in some instances appear in small cysts. In the male the remains of the body are found near the head of the epididymis, and consist of small diverticular canals, the *vasa aberrantia Halleri*, and the hydatid of Morgagni. The author denies that, as Kobelt asserts, the canalicules of the Wolffian body form the vasa efferentia of the testicle.—*Provincial Med. and Surg. Journ.*, May 14th, from *Recherches sur les Corps de Wolff.* 1850.

ORGANIC CHEMISTRY.

8. *On so-called Chylous Urine.* By H. Bence Jones, M. D., &c.—The definition given of chylous urine is, that it is urine which is white from the suspension of fatty matter in it. An opportunity of observing a case of this disease having occurred to the author, he was led to make the experiments described in this paper. A harness-maker, æt. 32, half-caste, who had lived in London for twelve years, had been passing such water for nine months. On examination of the water made at 2 P. M. it solidified, looking, in ten minutes, like blanc-mange. It was very feebly acid, contained fibrin, albumen, blood-globules, and fat; specific gravity = 1015. 1000 grs. of this urine gave—

44.42	grs. total solid residue.
8.01	grs. total ash.
14.03	grs. albumen.
8.37	grs. fat.
13.26	grs. urea and extractive matter.
.75	grs. loss.
955.58	grs. water.

In order to watch the variations produced by food and exercise in the appearance of the urine, every time the urine was made, for five days and nights, it was passed into bottles marked with the hour. From these observations, and more particularly from the third, fourth, and sixth days, it was evident that the fibrin and albumen appear in the urine when no fat is there, and that the albuminous urine occurs before food has been taken, and disappears during the night with perfect rest. Thus, the fourth day, at 7h. 15m. A. M., on first getting up, the urine contained the slightest trace of albumen. The specific gravity = 1027; the precipitate by alcohol = 0.8 gr. per 1000 grs. urine.

At 9h. 50m. A. M., just *before* breakfast, the urine formed a solid coagulum, free from fatty matter, but contained a visible deposit of blood. Specific gravity = 1015.6; the precipitate by alcohol = 14.1 grs. per 1000 grs. of urine.

At 11 A. M., the urine was chylous or white from fatty matter.

Further experiments on the influence of rest and motion in lessening or increasing the albumen in the urine previous to food are then given.

On five different mornings, by rising early or late, and by collecting the precipitate from the urine by alcohol, the influence of rest and motion was determined. The author states that he could fix beforehand whether the urine should be albuminous or not, by directing the patient to get up, or to lie still.

The patient was bled, and the serum was opalescent, but did not clear with ether; the blood contained no excess of fat. 1000 parts of blood gave—

2.63	grs. fibrin.
159.3	grs. blood-globules.
78.1	grs. solids of serum.
240.03	grs. total residue.
759.97	grs. water.

The urine made the same day was examined at different hours; that made immediately before the bleeding was quite white, and that made an hour and a half afterwards was very milky also. Specific gravity = 1018. 1000 grs. of urine gave—

56.87	grs. total residue.
10.80	grs. total ash.
13.95	grs. albumen.
7.46	grs. fat.
24.06	grs. urea, &c.
.60	gr. loss.
943.13	grs. water.

The conclusions from these experiments are—

1. That so-called chylous urine, besides fat, may contain albumen, fibrin, and healthy blood-globules.

2. That, although the fat passes off in the urine after food is taken, yet the albumen, fibrin, and blood-globules are thrown out before any food has been taken. During perfect rest, the albumen ceases to be excreted; and it does not appear in quantity in the urine even after food is taken, provided there is perfect rest. A short time after rising early, the urine may coagulate spontaneously, although no fat is present: and this may happen previous to food, when the urine is free from fat.

3. Though the urine made just before and a short time after bleeding was as milky as it usually was at that hour of the day, yet the serum of the blood was not milky: it did not contain a larger quantity of fat than healthy blood does.

The general results are—

1. That the most important changes in the urine in this disease take place independently of the influence of digestion.

2. That the urine in one respect only resembles chyle, and that is in containing, after digestion, a large quantity of fat in a very fine state of division. The supposition that the disease consists in an accumulation of fat in the blood, which is thrown out by the kidneys, carrying with it albumen, fibrin, blood-globules, and salts, is altogether disproved, both by actual analyses of the blood, and by the frequent occurrence of a jelly-like coagulum in the urine when no white fatty matter can be seen to be present.

3. The disease consists in some change in the kidney by which fibrin, albumen, blood-globules, and salts are allowed to pass out, whenever the circulation through the kidney is increased; and if at the same time fat is present in the blood, it escapes also into the urine. That this change of structure is not visible to the naked eye on *post-mortem* examination, Dr. Prout long since demonstrated; and in a case of this disease which was in St. George's Hospital, and was examined at Plymouth, no disease of the kidney was observed. From the total absence of fibrinous casts of the tubes from the urine, it is not improbable that by the microscope a difference may be detected in the structure of the mammary processes, rather than in that of the cortical part of the kidneys. —*Philosophical Transactions*, 1850.

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9. *Remarks on the Cooking and Preserving of Meat.* By PROF. LIEBIG.—The view that broth derives its nourishing properties essentially from the dissolved gelatin—an opinion which has frequently been discountenanced in practice—is shown by this investigation to be completely untenable. The gelatin imparts no taste to broth, and forms by far too insignificant a portion to allow of its

nutritious properties being dependent upon it. Chopped beef, or veal, previously exhausted in the cold, when boiled for five hours, yielded to the broth, the former 0.5 per cent. and the latter 1.5 per cent. of soluble constituents, of which gelatine formed, at most, but one-half. On the contrary, this investigation confirms the view of Prout, that the peculiar constituents of broth exist ready formed in the flesh, and are by no means merely products of the process of ebullition. The residue of the chopped muscular flesh of different animals —as of the fox and ox—after having been exhausted in the cold, cannot be distinguished the one from the other; all the peculiarities of the flesh, especially its flavour, depending entirely upon the soluble constituents which are found in the broth.

The researches of Liebig offer a simple and convenient method of preparing, in a few minutes, a broth of the highest nutritive properties. Finely-chopped lean beef is mixed with an equal weight of cold water, and left, if possible, to macerate for a short time, and the whole then slowly heated to ebullition. After gently boiling for some minutes, the clear broth separates from the coagulated albumen, and from the muscular fibre, which has now assumed a sinewy appearance. After straining, it requires only to be seasoned, and slightly coloured with burnt onions, or with caramel. The colouring of the broth is nothing but a concession to the common prejudice, which cannot, however, be well dispensed with. By evaporation in a water-bath, or at a still lower temperature, the broth becomes spontaneously coloured, and leaves behind a brown extract, possessing a delicate odour of roasted meat; this extract, when dissolved in about thirty parts of water, and flavoured with salt, yields, at any moment, a most excellent broth. The advantage of extract of flesh for the nutrition of invalids, its use in hospitals, or in field service, as well as in domestic economy, is sufficiently obvious. We see, likewise, that bone-broth, broth-tablets, &c., being preparations essentially different from a true broth from flesh, cannot enter into competition with it as articles of food.

As an article of commerce, extract of flesh bears somewhat too high a price. It appears, however, to offer a new source of profit to the inhabitants of the different settlements in America and Australia, who might successfully prepare it from their cattle at a cheaper rate, and send it to the markets of our crowded populations.

As to the cooking of meat, it follows that to prepare, by boiling, a rich broth, and, at the same time, a savoury *bouilli*, is perfectly impossible. After preparing broth to the above directions, the meat which remains is perfectly unpalatable, tasteless, and tough, and as dissimilar as possible to the boiled beef of our tables. If, on the other hand, it be desirable to leave in the boiled meat the greatest amount of nutrition and flavour, it must be at once plunged into boiling water. If the temperature, after some minutes, be reduced to about 158° Fahr. by the addition of cold water, and the water maintained at that temperature until the meat is thoroughly cooked, all the conditions necessary for this purpose will have been fulfilled. If it be perfectly established that pure fleshy fibre—viewed independently of the juice—instead of being softened by boiling, is converted into a horny or sinewy mass, it is evident that this change is prevented by two different means in the ordinary mode of cooking meat: in the first place, by the temperature in the interior of the piece of meat never reaching the boiling heat; and, in the second place, by its being, nevertheless, sufficiently high to coagulate the albumen which surrounds, and, to a certain extent, protects the fibre. The temperature in the interior of the meat is not only sufficient to coagulate the albumen (132° Fahr.), but must attain even the point necessary for the coagulation of the colouring matter of the blood (from 149° to 158° Fahr.).

The investigation of Liebig exhibits the process of salting meat under a perfectly new aspect. The "brine," which meat and dry salt form when together, amounts to from one-third to one-half of the juice of the meat, and contains the chief constituents of concentrated broth. The brine presents an acid reaction, and, owing to the quantity of albumen present, coagulates when boiled; it contains, moreover, phosphoric acid, lactic acid, a large amount of potassa, kreatinine, and, doubtlessly, also kreatine. There can be no doubt, therefore, that salting diminishes the nutritious properties of meat, by the amount of constituents which pass into the brine; hence the explanation of the well-known injurious effect on health produced by the continued consumption of salt meat. —*Liebig's Report,* vol. ii.

10. *On the Oxidation of Ammonia in the Human Body, with some Remarks on Nitrification.* By H. B. Jones, M. D.—The author having shown, in a paper lately communicated to the Royal Society, that the effect of tartrate of ammonia on the acidity of the urine was totally different from that of tartrate of potash, and that carbonate of ammonia, taken in very large quantities, did not produce any alkaline reaction of the urine, but that, on the contrary, the acidity was rather increased than diminished by such doses, repeated the experiments with carbonate of ammonia, hoping to obtain more decided results. Although, from these experiments, it was again apparent that no diminution of the acid reaction resulted from taking carbonate of ammonia, yet the fact of any great increase in the acidity of the urine could not be determined. In his former paper, the author suggested that an inquiry into the occurrence of nitric acid in the urine would probably give the solution of this unexpected effect of carbonate of ammonia; and he was led to undertake the experiments described in the present paper with a view of detecting the presence of that acid under particular circumstances.

The indigo test for nitric acid being more delicate than the protosulphate of iron test, it was chiefly employed; but a mixture of starch, with a drop or two of solution of hydriodate of potash and hydrochloric acid, was found to be a far more delicate test than either. Beginning with 10 grs. of nitrate of potash added to 10 oz. of urine, it was found at last that as little as 1 gr. of nitre to 10 oz. of urine could be detected with the greatest certainty and clearness when the starch test was used; but this quantity could not be detected as surely by the indigo test.

Experiments are described in which carbonate of ammonia was given, in doses varying from 40 grs. to 7 grs., to a healthy man in whose urine no nitric acid could previously be detected; and the urine was tested at intervals of several hours after each dose. From these it appears that 10 grs. was the smallest quantity that gave decided evidence of nitric acid by both tests.

Having satisfied himself that when carbonate of ammonia was taken, small quantities of nitric acid passed off in the urine, the author made similar experiments with tartrate of ammonia, administered in doses of 60 and 40 grs.; and in each case the starch test gave evidence of the presence of nitric acid in the urine some hours after. Similar experiments with the muriate of ammonia are next described; and in these the presence of nitric acid in the urine was readily detected three hours after the administration of the dose, even when it was so small as 10 grs.

By an experiment described in the paper, it was shown that, by a simple combustion of ammonia out of the body, as well as in the body, nitric acid was produced. From other experiments it appears that urea, also, by oxidation, whether in the body or out of the body, gives rise to nitric acid.

Having found that nitric acid was produced more readily and frequently than had been supposed to be the case, the author was led to try whether combustions in the atmosphere without ammonia could not give nitric acid. The presence of this acid was, in consequence, detected in the products of the combustion of alcohol, of coal, of a wax candle, and of hydrogen.

As this led to the supposition that nitric acid might exist in rain-water at all times, experiments were made on the rain-water collected on wet days in London, and the presence of nitric acid was discovered by the starch and also by the indigo test.

The conclusions the author comes to from his experiments are:—

1. That the action of oxygen takes place in the body, not only on hydrogen, carbon, sulphur, and phosphorus, but also on nitrogen.

2. That in all cases of combustion, out of the body and in the body, if ammonia be present, it will be converted partly into nitric acid.

3. That the nitrogen of the air is not indifferent in ordinary cases of combustion, but that it gives rise to minute quantities of nitric acid.

He further remarks, that the production of nitric acid from ammonia in the body adds another to many instances of the action of oxygen in man; and that the detection of nitric acid in the urine may lead to the conclusion that the blood is being freed from ammonia, or from substances closely related to it, as urea, or possibly caffeine and other alkaloids.—*Monthly Journ. Med. Sci.*, May 1851.

MATERIA MEDICA AND PHARMACY.

11. *New Experiments on the Woorara Poison.* By MM. Cl. Bernard and Pelouze.—It appears from these experiments, an account of which was read before the Academy of Sciences of Paris, that the action of the woorara is instantaneous when it is injected directly into the vessels. When the jugular vein of dogs and rabbits has been thus injected, the animals have died as if struck with lightning, without screams or convulsions. If the woorara is introduced under the skin in solid fragments or in solution, its action is not so rapid, and in proportion with the size of the animal and the dose. Birds and mammalia die in a few minutes, but it takes several hours to destroy a reptile with the poison. Birds and dogs do not seem immediately affected after the puncture: the former fly for a little while, but soon fall and die without a struggle; the latter walk about at first, then lie down as if tired, and seem to fall asleep and die imperceptibly. Galvanism has, after death, no influence on the nerves, the blood is black, refuses to coagulate, and is no longer reddened by the contact of the air.

The woorara may without danger be ingested into the digestive canal, but if the poison be mixed with gastric juice, and introduced under the skin, it takes effect. Thus it would appear that the woorara is not decomposed in the stomach, it is merely dissolved in that organ, but the mucous membrane does not absorb it. A simple experiment will prove that this property of mucous membranes is of a purely physical and not a vital nature. If a piece of gastro-intestinal mucous membrane is adapted to a glass tube, with the mucous surface turned outwardly, a watery solution of sugar having been introduced into the tube, the liquid will rise in the tube if it be plunged into a solution of woorara, endosmosis will have taken place, but no woorara has traversed the membrane. The poison will, however, penetrate the membrane if the latter be not fresh, and the contact last very long.—*Lancet* 15th March, 1851.

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12. *Preparation of Atropine by means of Chloroform.*—The following method of employing chloroform for the purpose of separating organic alkalies has been proposed by M. Rabourdin, of Orleans:—

The expressed juice of the fresh belladonna is heated until the albumen coagulates, and then filtered. To the cold, clear fluid are added 4 scruples of caustic potass and 30 scruples of chloroform per pint; the whole is then agitated for a minute and allowed to depose. In half an hour the chloroform deposes, charged with atropine, under the appearance of a greenish oil. The supernatant fluid is now decanted and replaced by some water; the latter is also decanted, and the operation repeated until the water comes off limpid. The solution of atropine in chloroform is now distilled in a sand-bath, until all the chloroform has passed off, and the residue is dissolved in a weak solution of sulphuric acid, which takes up the atropine. To obtain the latter in a perfectly pure state, we add carbonate of potass in excess, collect the residue, dissolve it in alcohol, and evaporate the latter.—*Med. Times*, May 24th, 1851, from the *Bulletin de l'Institut.*

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

13. *Value of Vaccination.*—[DR. GUY, in his interesting lectures on public health, now in course of publication in the *Medical Times*, has brought forward the following striking statements illustrative of the great value of vaccination, and of the vast saving of human life and human suffering it has been the means of effecting:—]

In the history of small-pox, we have three different periods to compare with each other: a period anterior to the introduction of inoculation; a period during which inoculation was practiced; and a period during which inoculation was superseded by vaccination. As inoculation was introduced into England in 1721, the deaths from small-pox during the ten years ending 1719 will fairly represent the mortality occasioned by small-pox, unmodified by the practice of inoculation. Now, as I have already stated, the practice of inoculation did not gain much ground till towards the middle of the 18th century, and did not become general in England till the last quarter of that century. Hence the ten years from 1740 to 1749, inclusive, will correspond to the introduction of inoculation into partial use; and the ten years from 1790 to 1799, inclusive, will mark the time when it was largely and generally practiced. In like manner, the ten years from 1810 to 1819, inclusive, will represent a period during which inoculation was to a great extent, though by no means altogether, superseded by vaccination. The ten years from 1840 to 1849, inclusive, will represent a period when small-pox inoculation, having fallen into entire disuse, and been even declared an illegal practice, vaccination has come to be the only preventive of small-pox employed or permitted. It must not, however, be forgotten, that large numbers of persons still remain unvaccinated, though the greatest possible facilities are offered for the performance of the operation, and that without charge to the poor.

I have arranged the deaths by small-pox for the five periods of ten years each to which I have just referred, in a tabular form, so that the numbers may admit of easy comparison.

	Deaths from Small-pox.	Estimated Population within the Bills of Mortality (limits in 1726.)	Deaths from Small-pox in a million inhabitants.
1. Ten years ending 1719, before inoculation	21,228	675,691	31,416
2. Ten years ending 1749, inoculation partially practiced	20,029	708,188	28,282
3. Ten years ending 1799, inoculation in general use ..	17,685	773,344	22,863
4. Ten years ending 1819, vaccination in general use ..	8,334	1,035,865	8,045
5. Ten years ending 1849, inoculation superseded by vaccination (whole metropolis)......	9,174	1,912,172	4,798

A small decrease in the number of deaths from small-pox, coincident with the partial practice of inoculation; a still more marked decrease under the more general use of that palliative; but a far more remarkable falling off in the number of deaths from small-pox, concurrently with the introduction and extension of vaccination: such are the results stamped on the very face of the table which you have before you,—results fully borne out by Mr. Farr, who says that, "In 1771 to 1780, not less than 5 in 1000 died annually from small-pox; while in 1801 to 1810, the mortality sank to 2; and in 1831 to 1835, to 0.83," or less than 1 in 1000.

The decrease in the number of deaths from small-pox in the second and third periods of ten years, is a circumstance in favour of the views of the supporters of inoculation, who affirm that that practice, though objectionable in one point of view, was on the whole beneficial.

That inoculation may really have been the means of saving life to some extent does not seem altogether improbable, when we bear in mind that in place of the mortality of *one in four*, which attended the small-pox caught in the usual way, the loss under inoculation, when skilfully and carefully practiced, did not exceed *one in* 500. So that it is quite possible that the mischief which inoculation wrought by spreading the disease among those who might never have caught the natural small-pox, was counteracted by the good it effected in reducing the danger to a very insignificant amount. But even admitting the justice of this compensation, the benefit really due to inoculation does not exceed the saving of 8500 lives in 31,500; whereas the boon conferred by vaccination is represented by a reduction of the mortality from nearly 23,000 in the ten years ending 1799 (the very heyday of inoculation) to 8000, and then to less than 5000, being a saving of life more than twice as great as that effected by inoculation.

But the superiority of vaccination over inoculation is only partially and imperfectly represented by the greater saving of life which it effects. It has the great additional merit of requiring no preparation or confinement, of producing very trifling indisposition, and of entailing no danger. Above all, it is free from the great objection to inoculation, that, while it mitigates the disease in the individual, it brings the infection home to those who may happen to be unprotected, and who might never have been exposed to the contagion of the natural small-pox.

Taking all these considerations into the account, there can be no doubt that the legislature was perfectly justified in rendering the performance of inoculation a legal offence, and in giving, by the appointment of public vaccinators, to be remunerated by a moderate fixed charge, large facilities for carrying the blessing of vaccination to the very doors of the poor.

But, undisputed as is the superiority of vaccination, and undoubted as are the benefits it has conferred, they are small indeed compared to those which it was calculated to bestow if the practice of it had been as universal as it ought to have been. It was the cherished opinion of Jenner himself that we possess in vaccination a means of entirely eradicating the small-pox, and some facts are on record which seem fully to bear him out in that view of the case. Thus, Sir Gilbert Blane tells us that he was informed, on good authority, "that vaccination had been practiced with so much energy and success in Lima that for the last twelve months there had occurred not only no deaths from, but no cases of small-pox; that the new-born children of all ranks are carried as regularly to the vaccination-house as to the font of baptism; that the small-pox is entirely extinguished all over Peru, nearly so in Chili, and that there has been no compulsory interference on the part of the Government to promote vaccination." Sir Gilbert Blane goes on to say, "It is now matter of irrefragable historical evidence, that vaccination possesses powers adequate to the great end proposed by its meritorious discoverer in his first promulgation of it in 1798, namely, the total extirpation of small-pox. The first proof of this was at Vienna, where, in 1804, no cases occurred except two strangers, who came into the city with the disease upon them. In 1805, there did not occur a single death from it in Copenhagen."

I quote this more detailed account of the progress of the small-pox in Denmark from a MS. of Jenner's, published by Dr. Baron in his Life of Jenner. "From the year 1762 to 1792, the number that died of small-pox in the Danish dominions amounted to 9728. About the year 1802, vaccination was first introduced, and the practice became general, but not universal; however, fifty-eight persons only died of the small-pox to the year 1810. Vaccination, by command of the king, was now universally adopted, and small-pox inoculation prohibited. And from the year 1810 to the year 1819, not a single case of small-pox has occurred." From the same MS. I quote the following passage: "From Bombay, I learn the small-pox is there completely subdued, not a single case having occurred for the last two years."

"Dr. Sacco, the indefatigable superintendent of vaccination, in Lombardy (I resume my quotation from Sir Gilbert Blane), stated, in his annual report, 3d of Jan. 1808, that small-pox had entirely disappeared in all the large towns in that country; and that in the great city of Milan it had not appeared for several years. Dr. Odier, of Geneva, so favourably known for his high professional, scientific, and literary acquirements, testifies that, after a vigorous perseverance in vaccination for six years, the small-pox had disappeared in that city and the whole surrounding districts, and that, when casually introduced by strangers, it did not spread, the inhabitants not being susceptible. The central committee in Paris testify, in their report of 1809, that the small-pox had been extinguished at Lyons and other districts of France." "These (I still quote from Sir Gilbert Blane) are selected as some of the earliest and most remarkable proofs of the extirpating power. But it is demonstrable that if, at the first moment of this singular discovery, at any moment since, at the present or any future moment, mankind were sufficiently wise and decided to vaccinate the whole of the human species who have not gone through the small-pox, from that moment would this most loathsome and afflicting of all the scourges of humanity be instantaneously and forever banished from the earth." If for this somewhat too enthusiastic view of the case, we substitute (what Sir Gilbert Blane probably intended to affirm) that if in any way it could be brought about that every man, woman, and child, for a term of years, could be vaccinated, small-pox would gradually die out, and ultimately disappear, like a fire extinguished for want of fuel, we should be stating what all experience and analogy seem to warrant. In our own country, we have not, that I am aware, had any proof afforded us of the extirpating power of vaccination. But we have had some striking and encouraging illustrations of the power of vaccination when systematically practiced. The army affords us one such instance. In Her Majesty's dragoon guards and dragoon regiments, which, in common with the rest of the army, are submitted to inspection, and vaccinated without exception, if that operation is found to have been omitted, "the deaths from small-pox during a period of seven and a quarter years, in an average annual strength of 6165 men, were only *three*—a proportion which would represent an annual mortality of 1 in 14,900 adult males!"

The value of vaccination is shown in a very remarkable manner by the experience of certain severe epidemics of small-pox, which have taken place since vaccination came into general use in this country. There was such an epidemic in Scotland in 1818-1819, when a careful analysis of the cases showed that, out of 205 cases occurring in persons unprotected either by vaccination or previous small-pox, 50 died, being one death in every *four* cases; out of 71 cases in which small-pox had occurred a second time, there were *three* deaths, or one in 23; while out of 310 cases, occurring after vaccination, one only died! In this instance, then, the protecting power of vaccination proved to be more than 13 times as great as the protecting power of small-pox itself. A similar result was established in the epidemic of small-pox which occurred at Marseilles in 1828. It was estimated that the population consisted of 8000 *unprotected* persons; of 2000 who had been *inoculated*, and of 30,000 who had been *vaccinated*. Now, of these 8000 unprotected persons, 4000, or one-half, were attacked by small-pox; of the 2000 who had been inoculated, 20 were attacked, being 1 in 100; and of the 30,000 who had been vaccinated, 2000, or 1 in 15, were attacked. The mortality of the several classes was as follows: Of the 4000 unprotected persons, 1000, or 1 in 4, died; of the 20 inoculated persons, 4, or 1 in 5; of the 2000 vaccinated persons, 20, or 1 in 1000! It would seem, then, that the practice of vaccination is less effectual in preventing small-pox than that of inoculation; but that, at the same time, the disease, when it does occur after vaccination, is of so mild a character as to destroy only 1 life for every 20 sacrificed by small-pox occurring after inoculation.

The relative value of vaccination and inoculation, and the proportional risk of the protected and unprotected, will be best seen by supposing 15,000 unprotected, inoculated, and vaccinated persons, respectively, to be exposed to the danger of catching small-pox. The result as regards these several parties are shown in the annexed table:—

	Unprotected.	Inoculated.	Vaccinated.
	15000	15000	15000
Attacks	7500	150	1000
Deaths	1875	30	10
Ratio of attacks	1 in 2	1 in 100	1 in 15
Ratio of deaths to attacks	1 in 4	1 in 5	1 in 100

In order to form a just idea of the superiority of vaccination, we must not forget to add to the lives saved by it, the blindness, deformity, and lingering debility which it is the means of preventing in those cases which do not prove fatal; for it may safely be assumed that these untoward consequences bear a certain relation to the fatality of the disease, being of more frequent occurrence where the mortality is highest.

14. *Case of Small-Pox recurring a third time after Vaccination, when it proved fatal.*—Dr. John Webster communicated an example of this to the Royal Medical and Chirurgical Society, Feb. 26, 1851. After alluding to the fact that hooping-cough, measles, and scarlatina generally occur only once during the lifetime of an individual, exceptions, nevertheless, to the above rule, as well in these complaints as in small-pox, have been recorded by authors. Three well-marked examples of the recurrence of small-pox met with in the same family are related, one of which terminated fatally. The case especially referred to by Dr. Webster was that of H. N. N——, who had been vaccinated satisfactorily in 1827, when three months old. Notwithstanding this circumstance, he became attacked by small-pox in 1833, along with an elder brother, who had been likewise vaccinated. Both patients recovered, and nothing more was thought of the matter till 1838, when the two lads were again attacked by variola, along with another—that is, a third—brother, likewise regularly vaccinated. However, all three got quite well in due time. Subsequently, Mr. H. N. N——, whose case is now just mentioned, went to India in the Company's service, where he was seized, in April last, with the usual and well-marked symptoms of small-pox, which soon became confluent, and proved fatal at Dharwarinth, on the 13th of that month; this making the third time this gentleman had been attacked by variola, although previously vaccinated.

15. *Case of Confluent Small-Pox after a third Vaccination.*—The following case of this kind was communicated to the Royal Medical and Chirurgical Society by Dr. A. P. Stewart. A gentleman twenty-five years of age, who had been five years apprenticed to a gentleman in extensive general practice in Devonshire, had been most successfully vaccinated when six months old. Requiring to attend variolous cases, he had the operation repeated in July, 1849, without effect, and again in May, 1850, with much irritation, inflammation, and swelling of the arm, the lymph from the vesicle not communicating the disease. He came to London to begin his medical studies on the 13th of October last, having been exposed to infection the same morning. The train of premonitory symptoms set in on the 15th, and was followed (on the 17th) by the appearance of a closely packed eruption of papulæ all over the body. For four successive nights, mild delirium was present; but the sore throat and conjunctivitis occasioned by the pressure of vesicles were quickly relieved by the application of a solution of nitrate of silver; and the pulse, previously as high as 120, never rose above 100 after the seventh day. The vesicles, though very numerous on the hands and feet, caused little or no pain; on the eleventh day of disease, and seventh day of eruption, they were at their height, and in the course of the next two days, had nearly all dried up and scaled off, with very trifling discharge. Thereafter convalescence went on rapidly. In the district where the subject of this attack resided, the popular prejudice against vaccination has always been so strong that for a number of years it had been much neg-

lected; and the parents are still in the habit of inoculating their children. During the last nine months, it has been practiced to a very large extent, with so much secrecy as to defy the utmost efforts of the authorities to obtain legal proof, and with the effect of keeping up the disease during many months, and spreading it abroad over the whole district. It was introduced in April by a sweep boy, who took it in a town not far off, and, returning to his family, communicated it to his unvaccinated brothers and sisters. The latter, again, going to a lace school, infected several of the other children, after which it spread rapidly in all directions. Several instances were adduced, as examples of a large number in which inoculation had entirely failed to protect those who had been subjected to it, from secondary attacks; besides the case of a lady of title, whose mansion was in the infected district, and who had lately had a second attack of natural small-pox The author then stated, as the result of his and Dr. A. Anderson's experience in the Glasgow Fever Hospital, from November, 1836, to November, 1838, that of the 126 cases admitted, 31 were vaccinated, 52 doubtful (consisting of unvaccinated, with a sprinkling of imperfectly vaccinated patients), and 43 unvaccinated. The mortality among the "doubtful" was 1 in 3.06, or 32.7 per cent.; among the unvaccinated, 1 in 2.86, or 34.8 per cent.; while among the vaccinated it was only 1 in 31, or 3.2 per cent. The author concluded his remarks by adducing his experience in the north-west district of St. Pancras parish, during the epidemic of 1845. Those who had been successfully vaccinated, both children and parents, though exposed night and day, in their unventilated dwellings, to the concentrated infection of the disease in its worst forms, were proof against it; while those in whom the evidence of success was doubtful, were not proof against the milder forms, and very often took the disease from convalescents whom they met in the open air. The author concluded, with Chomel, that "we cannot fairly exact more from vaccination than from the small-pox itself."

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16. *Protective Power of Vaccination.*—[The reading of the two preceding cases before the Royal Medical and Chirurgical Society gave rise to an extremely interesting discussion, during which, Dr. Gregory made some statements of great importance, and the correctness of which is well worthy of investigation. We subjoin the report of the discussion as given in the *Lancet,* March 8:—]

Dr. GREGORY said that the cases detailed were interesting, and contained much which was worthy of the consideration of the Society. With respect to the first case, in which a person contracted small-pox in advanced life after vaccination, and died in India, he might remark, that the disease was more fatal in warm climates, and the case in this respect was not remarkable. The similarity of the cases, however, consisted in the statement which had been made, that these patients had small-pox three years after, and again five years after vaccination. Now, he would beg to ask Dr. Webster, who attended these cases, was he acquainted with the medical man who had the patients under his charge? He asked this, in order that it might be determined if the disease under which these patients laboured was variola or not. Certain it was that he (Dr. Gregory) never saw such cases; they never presented themselves at the Small-Pox Hospital. He must, therefore, be excused from doubting whether these cases were really cases of variola, until the doubt had been cleared up by further information from Dr. Webster. With respect to the second case, which was one of confluent small-pox after vaccination, it really contained nothing remarkable, except, indeed, the fact of re-vaccination having been practiced and followed by local inflammation. This showed convincingly the little value of re-vaccination. He had held this opinion for a long time past. But by far the most important part of the paper was its closing paragraph, the doctrine of Chomel, "that we have no right to expect more from vaccination than from inoculation itself." These few words involved considerations of the highest importance, and it was certain that the attention of the profession and the public must be called to the entire question, and to determine the value of the dictum in question. What, for instance, did we expect from inoculation? By it we gave the small-pox to the person inoculated. We submitted the system to a subtle and violent miasma; the system fortunately took it mildly, passed through the disease, and thus the matter ended. There might be exceptional cases to this termination, and some might have the ill luck to have small-pox a second time; but he believed few entertained fear on this point. No one above fifty who had been inoculated, he believed, had the slightest fear of small-pox. He had certainly seen cases in which this had occurred, but the chances in favour of it were very small indeed. But did the facts with which we were acquainted warrant us in banishing this fear when vaccination had been resorted to? He believed not; facts did not warrant us in banishing such fear. Up to puberty we might banish it. Cases of small-pox after vaccination up to the fifteenth year were very rare indeed; but after that period vaccinated persons were exposed to the chances of a first attack of small-pox, and were then liable to a second attack of that disease at fifty or sixty years of age. Thus inoculation was to give one attack of small-pox and have done with it; vaccination was to do away with the disease altogether, as it did up to puberty, but after that the patient was liable to the disease. Now, we never heard of modified small-pox up to the year 1817, or about fifteen years after vaccination was first performed. The cases of this disease had gone on increasing since the year 1825, and the results now were, that fifteen hundred patients had been admitted into the Small-Pox Hospital in seven years, with small-pox after vaccination; most of these were modified, but many were of a severe form of the disease. The deaths from small-pox after vaccination might be said to be a little above five per cent.; occasionally in some places, as in Copenhagen, for instance, it was as low as three per cent.; but taking the entire world it would amount to five per cent.

Dr. **Mayo** believed that, in the times previous to the epidemic to which he had referred, a great number of persons had been inoculated, that a greater number became affected with small-pox after inoculation than after vaccination, and that more of the first class than of the second died. If Dr. Gregory remembered the work to which he (Dr. Mayo) had referred, he begged to inquire into this point.

Dr. **Webster** said, two observations which had fallen from Dr. Gregory were so important that he must reply to them thus early. The first regarded the authenticity of the cases now brought before the Society, and whether they were genuine small-pox. On this point no doubt could prevail, as they were all attended by medical practitioners, who, as well as the parents, entertained no hesitation respecting the nature of the disease; whilst, in the particular case terminating fatally in India, the statement was made on the authority of the regimental surgeon who attended the patient during his last and fatal attack of variola. Dr. Gregory had likewise stated that small-pox was generally more severe in warm climates than in England. This opinion was quite correct, and fully borne out by the case just related; hence, persons imperfectly vaccinated, and therefore unprotected, ran greater risks in such countries than elsewhere. In proof of this peculiarity, he would beg leave to recall to the recollection of the president an interesting case, which had come under his own immediate observation, in which the patient, although vaccinated when young, fell ill of small-pox during the time he was a student at Guy's Hospital. From this attack the gentleman in question recovered by the president's judicious treatment; but, having subsequently gone to India, he there fell a sacrifice to that complaint. Another illustration of the same kind had also been mentioned to him (Dr. Webster) by Dr. M'Intyre, which merited record. It was that of an officer, likewise serving in the East India Company's service, who became attacked by malignant variola, in the north-western provinces of Bengal, from which he died, although previously properly vaccinated in England. The brother of this individual, then travelling in South America, where small-pox prevailed, although both vaccinated and inoculated when young, got so alarmed and doubtful respecting his immunity from attacks of the above disease, that he was again vaccinated, after hearing of his relative's death in India. Notwithstanding this additional precaution, secondary small-pox, of a virulent sort, manifested itself, from which the patient would have died, according to his medical attendant's opinion, but for the recent vaccination. This and the other cases further illustrated, in a marked manner, the predisposition to receive the variolous poison more than once by members of certain families, especially in the examples narrated in his (Dr. Webster's) communication, although they were all vaccinated and also had small-pox previously. It was also curious that, in every instance, the males only were affected, whilst the sister of the three brothers just mentioned was not attacked by the malady. In bringing forward the present anomalous cases, it was not his (Dr. Webster's) intention to detract from the great protective benefits of cow-pox, but simply to record an illustration of a most unusual occurrence; and he would add, no one entertained a higher opinion of the benefits following vaccination, when properly performed, than himself, which seemed to be conclusively proved by the fact that, previous to the introduction of inoculation, one-tenth of the total mortality in England was occasioned by small-pox. After inoculation was introduced, it fell to one-fourteenth; but now, when cow-pox has become more generally diffused than some years ago, the deaths by variola are nearly one in eighty-five from all diseases: thus amounting to only one-sixth of the ratio when variolous inoculation was the sole preventive.

Dr. **Halley** begged to ask Dr. Gregory his opinion on the following point: If the protective power of vaccination lasted only to the fifteenth year, would it be advisable to re-vaccinate persons at that period?

Dr. **Gregory** had not stated that the protective power of vaccination ceased at fifteen, but that, up to that period, the protection afforded by it was as great as that afforded by inoculation all through life. After fifteen, the system was subjected to another law. With respect to the question, as to whether re-vaccination after fifteen renewed the protection, he might answer that, in his opinion, re-vaccination was a proceeding of very little moment. It satisfied the mind of the public, rather than effected any real good. If it satisfied the mind, why should it not be performed? Let it be so, by all manner of means; but not under the impression that it afforded any protection. Well, then, what was the law which prevailed with respect to the influence of vaccination after fifteen? The constitution, at that period, began to be susceptible, for the first time, to the influence of small-pox, and the susceptibility increased up to middle age and maturity.

We had, however, he thought, means of increasing the protective power of the first vaccination by inoculation after the age of fifteen. The statute-law, in reference to inoculation in this country, prohibited experiments on this point. In France, another law on the subject of inoculation prevailed, not having the same object in view as in this country. Cazenave and others had performed many experiments on this point, which proved that inoculation after fifteen, in persons previously vaccinated, did not produce a vesicular or pustular eruption, but only a papular one, and that this was not contagious. This he knew to be true, and he firmly believed it acted as a protection for life. Several Italian physicians had urgently requested permission from the Austrian government to follow out the experiments of Cazenave; but the authorities refused their sanction to the proceedings, though, in the Austrian dominions, the prohibition was by edict, and not by statute; hence the hardship of non-compliance with the request was greater.

Dr. **Copland** said his experience went to prove the correctness of Dr. Mayo's statement, respecting the protective power of vaccination until the age of fourteen being more complete than that of inoculation, and that the proportion of persons affected with small-pox was less from the former than the latter. When he commenced practice, he attended a family at Hackney, some of whom had come under his care with small-pox after vaccination: the vaccination had been properly performed, and the cicatrices were distinct and complete. The grown up persons in the family had the disease very badly, and it became more and more modified as the ages of the patients decreased; so that in a boy of eleven years of age it assumed a nearly papular form. From these and other facts which had come to his knowledge at the time, he arrived at the conclusion that vaccination exerted only temporary protection from small-pox, and that it was not, as advanced at the time, a protection for life. This had since been proved to be correct. Dr. Copland then referred to a case of fatal malignant small-pox occurring in a lady who had been vaccinated twenty years before, in support of the opinion that the protective power of vaccination did not extend beyond puberty.

Dr. BASHAM thought that sufficient stress had not been laid upon the distinction which he thought ought to be drawn between perfect and imperfect vaccination. Many of the latter he believed were those who were affected with small-pox. The other day he had taken ten patients at random in the Westminster Hospital, and, on carefully examining their arms, had found only four which presented the true fixed and characteristic cicatrix of perfect vaccination: the other six were spurious and bastard scars, and insufficient to determine that vaccination had been properly performed.

Dr. SNOW said that he had attended a case of modified small-pox after vaccination in a child three years of age, and had seen other cases of modified small-pox in children—nearly as many, in fact, as he had seen in the adult. He would be glad to know from Dr. Gregory on what data he founded his opinion that vaccination was an almost complete protection up to about the age of fifteen, and a much worse protection in after life. If this data were founded on the experience of the Small-Pox Hospital, he would suggest that it might be open to fallacy; for modified small-pox in children was so mild a disorder, that mothers would not think it necessary to send their children to an hospital on account of it; but when it occurred about the period of puberty, the subjects of it were generally away from their mothers, in situations where it was inconvenient to attend to them, and amongst persons who had a great dread of contagion, and the patients were consequently sent to the Small-Pox Hospital. We very seldom saw small-pox in persons of thirty-five, forty, or forty-five years of age, although the majority of people now living at that period of life depended for their protection on vaccination, and not on inoculation. The great body of practicing medical men, for instance, had been vaccinated—not inoculated; and although they were every now and then called to a case of small-pox, they rarely took the disease. He could not, therefore, concur in the fears of Dr. Copland with respect to future epidemics of small-pox.

Dr. WEBSTER remarked, as allusion had been made to Dr. Thompson's statistics of the mortality in small-pox occurring after vaccination, he might mention, amongst 71 cases of variola met with by that author, in persons previously vaccinated, only three died, or one in 24 examples; whereas, in 205 cases of primary small-pox, 50 died, being one death in every four patients attacked. Indeed, a great proportion of the mortality from variola then occurred, as at present, amongst unprotected persons. For instance, during the last quarter, 69 individuals died at Nilston from small-pox, of whom 50 were not vaccinated. In the eastern division of Wolverhampton, amongst 61 deaths from the same disease, 46 never had undergone vaccination. In Dudley, where 60 persons likewise died from variola, 50 of these never were vaccinated; whilst at Coventry, out of 65 deaths by the same cause, only eight of the entire number were said to have had cow-pox previously. But such occurrences were not surprising, considering the prejudices still prevalent in many parts of the country respecting the utility of cow-pox. Some parents objected to vaccination, because it was giving the disease of an animal to their children; others, because it was flying in the face of Providence to employ such means to prevent the spreading of a natural complaint; whilst some disliked novelty, and preferred inoculation. He (Dr. Webster) must again repeat, notwithstanding vaccination was not invariably a preventive of variola, it nevertheless had conferred immense benefits upon the community, and should be constantly employed; of course, taking due care that genuine cow-pox was always communicated. To prove how much good this modern discovery had accomplished, it was only necessary to look at the large assemblage of smooth faces now in that room, where not a single individual marked by small-pox could be seen. (A laugh.) Again, when walking in the crowded streets of London, it was equally rare to meet instances of the kind, thus showing a very different state of matters from that formerly prevalent.

Dr. GREGORY, in reference to Dr. Basham's remark respecting the indications afforded by the appearance of the cicatrix as to the perfect or the imperfect performance of vaccination, said that he thought it had been long ago conclusively settled that no conclusion whatever could be drawn, with respect to this point, from the appearance of the cicatrix. If a good cicatrix were found, then you might be satisfied that the vaccination had been perfectly performed; but if the cicatrix were imperfect, you had no right to assume that the patient had not been well vaccinated; for in these cases the process of reparation might have been quick; there might have been little inflammation, or there might be other causes to account for the imperfect cicatrix. He had long ago published cases on this point. Dr. Snow had asked him on what evidence he had arrived at the conclusion that vaccination afforded nearly complete protection from small-pox up to the period of puberty? and had inferred that he had derived his evidence mainly from the small-pox hospital; but this was not the fact. He had drawn his conclusions from extensive observations, and from correspondence with persons all over the kingdom. He had never seen modified small-pox in the young, either in private or public practice; neither had he read of it in books, or heard of its occurrence abroad. It was only to be found occurring in the adult. Dr. Webster had expressed his hope that the facts and statements advanced would not shake the confidence of the public in vaccination. He (Dr. Gregory) hoped so, too. Even if vaccination prevented small-pox in only one-half of the cases in which it was performed, it was a great protection; and as it was shown by statistics that about half the population died before the age of fifteen, it afforded to that half, at least, perfect and complete protection.

Mr. Arnott inquired of Dr. Gregory what was the relative mortality from cases of small-pox without, and after, vaccination?

Dr. Gregory replied that, from the year 1844 to 1850, 2854 cases of small-pox had been admitted into the hospital: of these 1500 were after vaccination. The deaths among the entire number had been 579: of these, only 75 were amongst the vaccinated portion. It was a simple matter of calculation to determine the relative mortality.

Dr. Addison inquired of Dr. Gregory what his impression was respecting the identity of small-pox and chicken-pox?

Dr. Marshall Hall rose and said that he was just about to ask Dr. Gregory the same question—viz., his opinion of Dr. Thompson's view of the identity of vaccinia and the modified small-pox? There was another question which he begged to ask Dr. Gregory. It sometimes happened that a child resisted vaccination. Was it then liable to take the small-pox? His own son had been vaccinated fourteen times unavailingly—once by his friend Mr. Barlow, who sat near him. No vaccine vesicle ever formed. His son was sent to Eton, being thirteen years of age; and on coming home, on July the 29th, 1844, for the holidays, went to Brighton. There, on August the 12th, he was observed to be covered with an eruption. Some of the spots at once exhibited the form of distended vesicles, of moderate size, observed in *chicken-pox*. Others of the spots went through the regular course of *horn-pock*, occupying five or six days. One or two on the face left distinct *pits*, the result of sloughing, as seen in *small-pox*. Dr. Hall added, that such a case seemed to demonstrate the insecurity of the patient, when vaccination had failed several times, and to confirm the opinion of Dr. Thompson, that varicella and modified small-pox were the same disease, for in it they occurred simultaneously. Some children seem to possess peculiarities in regard to their susceptibility to the eruptive diseases. The same boy, on returning to Eton, took the scarlatina. There was, however, no rash on the skin; but the sore-throat and the enlarged papillæ of the tongue were so distinctly scarlatinous, that he (Dr. Hall) had had a drawing made, which he still preserved, as admirably representing this form of eruption.

Dr. Gregory, in answer to the question respecting the identity of small-pox and chicken-pox, replied, that the diseases, though bearing some relation to each other, were undoubtedly different and distinct in their nature. In proof of this it had been demonstrated that genuine vaccination had been received before and after the occurrence of chicken-pox. The occurrence of the latter previously made no difference to the development of the former. In addition to this, the two diseases might go on together in the same person. Now, in reference to small-pox, we never saw these modifications. With respect to the case mentioned by Dr. Hall, he had no hesitation in saying that the variolous miasma had done its worst; and though, like the patients mentioned in the paper of Dr. Webster, Dr. Hall's son might have the ill luck to contract secondary small-pox, the great probability was that he would not.

Dr. A. P. **Stewart** said that his object in bringing his paper before the Society was to show the influence of vaccination on a case of modified confluent small-pox, in opposition to the case of Dr. Webster, in which death from small-pox had followed vaccination. He had an additional object, however, in his paper, and that was, to draw attention to the remarkable epidemic which had occurred in Devonshire, to mention the strong prejudice which existed in that locality against vaccination, and the bad effects which had resulted from inoculation for variola—a practice which could only be justified by knowing that it afforded a real, effective, and permanent protection from a second attack of small-pox. Dr. Mayo had appealed to the experience of Dr. Thompson on this point, and the results in Devonshire fully bore out that experience; for in that locality the persons inoculated were affected by secondary small-pox in a larger ratio than those who were vaccinated. There was no question that a larger number of these persons were inoculated, and the statistics showed that they were not protected from a second attack of the disease. He regarded the occurrence of 1500 cases of small-pox after vaccination as a very small number indeed, out of a population of two or three millions, and that fact alone showed the great protective power of vaccination. But it was not in hospitals that the protective power was to be seen in its full force: in those institutions the more striking illustrations were not witnessed; but in the poor districts, where day after day the small-pox patients were crowded in confined, close, and unventilated rooms, the medical man in attendance had every opportunity of seeing the vaccinated mixing with the infected persons, and remaining free from the influence of the contagion. No stronger proofs than these of the protective power of vaccination could possibly be adduced. (Hear! hear!)

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17. *Observations on the Urine in Pneumonia.*—Dr. **Redtenbacher** was engaged, in the year 1846, in making a series of experiments on the urine of patients labouring under different acute and chronic diseases, with the view of determining—first, the relation which subsists between the presence of inorganic salts and the specific gravity of the urine—and secondly, whether the increased or diminished proportion of these saline constituents is connected with the formation or retrocession of certain morbid processes. His observations were made in Skoda's wards in the Great General Hospital of Vienna. He found that the amount of inorganic salts was not subject to much variation, and consequently affected the density of the urine in a very trifling degree; but that its density depends upon the inorganic compounds, and especially upon the urea and uric acid. In cases of pneumonia, he has satisfied himself that the amount of chlorides in the urine undergoes variations dependent upon the stage of the disease. Healthy urine, as is well known, deposits a copious precipitate on the addition of nitrate of silver. Redtenbacher asserts that in all the cases of pneumonia (amounting to 80) in which he has applied this test, the faintness or absence of the precipitation has indicated a diminution or absence of chlorides. The precipitate becomes less distinct, from day to day, till resolution commences, when the chlorides again gradually resume their normal proportion. Diminution of the chlorides likewise occurs in typhoid fever, in acute arthritis, and in capillary bronchitis; but is neither a constant phenomenon in these diseases, nor observed at any certain period of the morbid processes. In cases of tubercular infiltration chlorides are found in the urine in normal proportion, but suffer diminution for a short time during each fresh infiltration.

Redtenbacher anticipates the objection as to the value of these observations—that the amount of the chlorides of the urine depends upon the amount of culinary salt used with the food, and that the quantity of the former will be diminished with the supply of the latter—first, by showing that the chlorides are not equally diminished in the course of other diseases, in which restricted diet is rigidly enforced; and secondly, by mentioning that Skoda's cases of pneumonia, on which his observations were made, were, from beginning to end of the disease, allowed a drink acidulated with muriatic acid. He believes, consequently, that the uniform diminution of chlorides in the urine of pneumonia, is somehow essentially connected with the morbid process.—*Monthly Journ. Med. Sci.*, April, 1851, from *Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, Aug. 1850.

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18. *On Exaltation of Hearing in Paralysis of the Facial Nerve.*—The Nos. of the *Gazette Médicale de Paris*, for Feb. 8th and 15th, contain a memoir on this subject by Prof. Landouzy, of Rheims. The following are his conclusions:—

1st. In its pathological relation the exaltation of hearing on the paralyzed side is an almost constant symptom of facial hemiplegia, independent of all cerebral affection.

2d. This exaltation appears at the same time with the hemiplegia, and disappears before it.

3d. It is to be attributed to the paralysis of the internal muscle of the malleus.

4th. It indicates that the nervous lesion is not situated under the first bend of the seventh pair.

5th. It may exist in the absence of the facial hemiplegia.

6th. That it may either coexist with hemiplegia. or be independent of it; it disappears spontaneously, entirely, and in the course of a fortnight or three months.

7th. To decide its existence, it is sometimes necessary to act on the hearing by a loud noise more intense in proportion to the time that has elapsed since the commencement of the affection.

8th. Special treatment will nearly always be useless; where it becomes necessary, it consists in tamponing the ear on the paralyzed side, and even both sides, to diminish the action of sonorous waves, to direct with prudence some cold or slightly astringent douches on the tympanum, and then to gabaurye as required the facial nerve or the membrane of the tympanum. In its pathological relation, this exaltation of hearing, dependent or independent of hemiplegia, appears to confirm the inductions of Dr. Longet on the intermediate nerve, which ought to be considered as a motor tympanic nerve, being to hearing what the ocular motor nerve is to sight.

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19. *On the Constitutional Origin of Erysipelas, and its Treatment.*—Dr. A. J. Walsh has furnished the *Dublin Quarterly Journ.* (Aug. 1850) some remarks on this subject, with cases, which are worthy of consideration.

The following is a summary of his remarks:—

1st. That erysipelas is a constitutional disease, depending solely on a morbid state of the blood; and that the eruption and fever are the means that nature takes to get rid of this poison.

2d. That, for all practical purposes, it is only necessary to divide the disease into idiopathic and traumatic.

3d. That tartar emetic seems to act specifically in erysipelas, by assisting nature in her efforts to throw off the disease.

4th. The best method of administering this medicine is by dissolving one grain in a quart of any bland fluid; the solution to be taken in the twenty-four hours.

5th. That as soon as the tartar emetic has acted sufficiently, sulphate of quina, or some other tonic, is to be administered.

6th. That, if the patient is debilitated, we must administer tonics at the same time that we give the tartar emetic.

7th. That under this treatment the erysipelatous inflammation may spread, but not with the same violence, nor to the same extent, as if the disease were left to itself.

8th. That we shall often require to give aperient medicine during the course of the case, as it is absolutely necessary to keep the bowels free.

9th. That local applications are unnecessary, and often injurious.

10th. That incisions are not necessary, except in the third, or suppurative stage: and if the antimonial treatment be early resorted to, it very rarely occurs that suppuration takes place.

20. *On the Treatment of Pruritis of the Genital, Anal, and Axillary Regions.* By Dr. Tournié.—What is generally designated by the term pruritis of the genital and axillary regions, is a cutaneous affection, under the form of prurigo, lichen, or eczema, of which the itching is nothing more than a symptom, and one of the principal phenomena, although it may sometimes exist without any apparent alteration of the skin, and without any other characters than that of the itch itself.

Without constituting a true disease, the itching is not the less a most inconvenient and disagreeable affection; moreover, it may sometimes determine, in nervous persons, consecutive symptoms of manifest importance. We know that onanism and nymphomania often owe their origin to these violent itchings.

There are few practitioners who have not had occasion to observe some one of these troublesome affections; and who, perhaps, have more than once deplored the inability of the materia medica to cure this intractable malady. Among the remedies in common use are corrosive sublimate, borax, sulphur, camphor, iodine, &c. With the aid of these means cures have been obtained; but none, in Dr. Tournié's experience, produced such constant and successful results as the following, which he employed in nine cases of pruritis of which he has reported the details: 1. An ointment of calomel, in the proportion of from 4 to 6 parts of calomel to 30 of axunge. 2. A powder, composed of four-fifths of starch and one-fifth of camphor, well pulverized and mixed. We may, however, in the ointment, increase the proportion of protochloride of mercury; and, in the powder, the dose of camphor, according to the obstinacy of the disease.

The mode of application is as follows: If the diseased parts are covered with scales or dry crusts, as in eczema, then separation is promoted by cataplasms and emollient baths; having accomplished which, he applies, twice a-day, frictions with the foregoing ointment, and, after the frictions, sprinkles the parts with the mixture of starch and camphor.

The ointment alone is inefficacious; and the camphorated starch, without the assistance of the ointment, allays the itch, but does not affect a cure. Experience has proved this.

The following are the cases of which he has reported the details: 1. Prurigo of the labia majora and vulva—intertrigo. 2. Lichenoid affection of the labia majora—intertrigo. 3. Chronic eczema of the scrotum. 4. Lichen in axillary region. 5. Itching of anus. 6. Ditto, do. Besides these, he notices three other cases of perfect cure by this treatment, two of lichenoid affections of the anus in men, and one of prurigo of the labia majora in a woman. He does not give the details of these last three cases. In one only—viz. that of the fourth case—was it necessary to increase, in a notable manner, the doses of calomel and camphor; in all the other cases, the ordinary formula was sufficient to produce a cure.

When the itching of the anus is caused by the presence of ascarides, the calomel and camphor are less efficacious; but he has recourse in this case to mercurial ointment, and often verified its vermicide effects on this species of worm.

The state of pregnancy seems to neutralize the action of the therapeutic means, the success of which he has recorded above. Thus the itching of the genitals in two pregnant females proved intractable to every kind of treatment. In one only venesection seemed to allay the itchiness a little; but in the second it produced no effect;—in both, the itching disappeared immediately after delivery. In these two cases the itching had commenced during pregnancy; and it existed without giving the vulva any appearance of a lichenoid or pruriginous eruption.

Dr. Maslieurat-Lagémard has published, in the 12th No. of the "*Gazette Médicale,*" for 1848, page 204, a very curious and remarkable account of a general itching supervening, without eruption, in the course of eight pregnancies, in one of his patients. This did not commence till after the sixth month, and no treatment appeared to alleviate the violent itchings, which, during the eight pregnancies, resulted six times in premature deliveries.

In Dr. T.'s hands, the combination of the calomel ointment with the powder of camphorated starch, in the treatment of itching of the hemorrhoidal region, has given results which no other treatment has ever obtained in so constant a manner.

Every practitioner who has been consulted for these affections has been obliged to direct himself to formulæ of great variety, before hitting on a successful expedient. In illustration of this, it is sufficient to relate the summary of five observations published by Dr. Ruan, in "Hufeland's Journal."

Of these five cases, two were treated without any success by purgatives, diuretics, opium in large doses, Goulard's extract, and solution of borate of soda; intractable to all these means, they were cured by the balsam of copaiva.

In a third case, the copaiva, which had succeeded in the two first, was inefficacious; whilst the borax, which had failed in the others, caused the itching to disappear in this case.

A fourth case resisted the divers means employed for the first three and gave way to the administration of the subcarbonate of soda in small and repeated doses.

The fifth case resisted every treatment.

[Dr. Tournié takes no notice of hydrocyanic acid, which, in the proportion of a drachm to eight ounces of almond emulsion, we have found frequently to give great relief. In *prurigo ani* and *pudendi*, we have more frequently succeeded in effecting a cure with a weak solution of corrosive sublimate (one grain to eight ounces) than with any other application. The state of the digestive function and urinary secretion should always be attended to, whatever be the local treatment.]—*Monthly Journ. Med. Sci.*, April, 1851, from *L'Union Médicale,* 16th Jan.

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21. *Creasote in Diarrhœa.*—Mr. Kesteven extols (*London Med. Gaz.*, Feb. 1851) the efficacy of creasote in the cure of diarrhœa. The form in which he used it was: ℞.—Creasoti ♏j to ♏v; Spt. ammon. arom. ♏xv to ʒj; Aq. ℥j to ℥iss. Where pain has been severe, Tinct. camph. co. has been added.

In no single case, Mr. K. says, has creasote failed to be of signal benefit; in most cases one single dose was sufficient to arrest the course of the disease; in very few instances has it been requisite to administer more than the second dose.

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22. *Polypus of the Larynx.*—In our preceding No. will be found an elaborate review of the excellent work of Dr. Ehrmann on this affection. The following case, recently recorded by Dr. Pauli (*Medicinisches Correspondenz-Blatt*), is interesting in connection with this subject.

A tailor, 36 years of age, affected for two years with a dry cough, accompanied with very marked emaciation, and complaining continually of a foreign body in his throat, was supposed to be affected with phthisis. One morning, in a violent paroxysm of coughing, he threw up a vascular polypus, the length of half a finger, and from this moment he slowly began to recover.—*Gaz. Méd. de Paris,* Jan. 4, 1851.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

23. *Diffused Femoral Aneurism—Ligature of the Internal Iliac Artery—Recovery.*—Mr. G. Saunders, Assist. Surg. 47th Reg., has recorded, in the *Medical Times* (March 29th, 1851), the case of a soldier, nineteen years of age, admitted into hospital Aug. 8th, 1849, for a painful swelling in the left groin, which rather suddenly appeared five days previously, when at light infantry drill. The swelling was diffused and extended beneath Poupart's ligament; rather hard, immovable, having a central pointing of a dark blue appearance, and much surrounding inflammation of the integuments, but no pulsation; leeches and

cold lotions were applied to the part; purgatives, antimonials, confinement to bed, and spoon diet ordered. By these means the inflammatory state of the parts was much reduced. The next day the swelling was more pointed, with indistinct fluctuation. In a few days the integuments became thin and dark in colour; a small slough separated, and there was considerable oozing of arterial blood; pulsation in the tumour was now very audible through the stethoscope. The bleeding was arrested by pressure.

On the 21st the swelling became more diffused; base hard; much hemorrhage; great pain on pressure above Poupart's ligament; no pulsation in the artery immediately below the swelling, or in the corresponding popliteal space, with a diminution of the natural temperature of the limb.

On the following morning Mr. Battersby tied the external iliac artery of the left side about three-fourths of an inch above Poupart's ligament. The integuments were in the first place divided, to nearly four inches in extent, along the upper margin of Poupart's ligament, various layers having been cut through and much cellular tissue displaced, and some fat removed, directly beneath which the artery was exposed. The ligature was passed from the inner side of the artery without the least difficulty, and the vessel properly secured. Immediately this was done, pulsation in the tumour ceased; the concentric coagula forming the aneurismal sac subsequently sloughed away; the ligature separated on the twenty-first day after the operation, and on the 18th of October the man was discharged quite well.

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24. *Femoral Aneurism—Cure in twenty-four hours.*—Staff-Surgeon G. R. **Dartnell** records, in the *Medical Times* (Feb. 8th, 1851), a very interesting case of femoral aneurism in a soldier, aged 35, who had always enjoyed good health. The patient was admitted into the Regimental Hospital, Chatham, on the 16th May, complaining of pain in the lumbar region and left side below the ribs, occasioned, as he thought, by exposure to cold. On the 18th, the pain of back and side was entirely removed, but he directed attention to a pulsating tumour, about the size of a pullet's egg, on the anterior aspect of the left thigh, occupying a portion of the triangular space, within two inches of Poupart's ligament. He stated that he had only observed the swelling that morning, and that he was not aware of having made any violent exertion lately; but that for some time previously he had experienced a sensation of numbness and slight pain in the leg and instep.

The tumour in the groin is now rather larger than the longitudinal section of a hen's egg. It is pulsating very powerfully with a distinct bruit; is firm and elastic to the feel, but can be partially emptied of its contents by the pressure of the hand, and the pulsation entirely ceases under firm compression of the inguinal artery by the fingers. The circumference of the diseased thigh, over the tumour, is 19½ inches, that of the sound one 19 inches. He has some numbness in the leg, extending from the knee to the foot. Temperature of the limb natural; pulse at the wrist 80. Considerable diffuse pulsation is observable over the abdominal aorta, a little below and to the right of the scrobiculus cordis; the stethoscope gives, at this point, a very distinct bruit; a faint rasping sound at the site of the mitral valve, and a double bellows-murmur at the apex of the heart; general health good; bowels regular. Rest in the recumbent posture; low diet.

31st, 10 A. M.—No change.

3 P. M.—Aneurismal compressor applied, the pad of the instrument being placed over the external iliac artery, as it passes over the pubis, two inches above the upper edge of the tumour. The artery is under the complete control of the instrument, but its power is so regulated that the current of blood is only partially checked, a feeble pulsation being still perceptible in the tumour.

6 P. M.—Pressure of the pad rather irksome; still slight pulsation in the tumour; temperature of the limb reduced, with a numbness about the knee. Pad slightly shifted; pressure increased by a few turns of the screws.

9 P. M.—No pulsation in the swelling; pain from pressure of the pad a good deal complained of; but patient having been made fully aware of the nature of his complaint, and the principle of the treatment, bears the pain without the

least fretting or restlessness. Numbness and coldness of the limb increased; pressure slackened by a few backward turns of the screws, and the blood permitted again to pass feebly through the aneurismal sac. Frictions to the limb, and bottles of hot water to the foot. Some thirst; no arterial excitement; pulse 80.

June 1, 6 A. M.—Has had no sleep, and still complains of the pressure of the instrument. Tumour still pulsating feebly, but begins to have a firmer feel; numbness rather less, and temperature of the limb returning; no swelling or discoloration from obstruction of the venous circulation. Pad lifted from its position, the artery being commanded by the fingers a little higher up; integuments under the part very slightly reddened; parts cooled and sponged with cold water; instrument re-applied in quarter of an hour.

10 A. M.—Temperature of the limb nearly natural; very little uneasiness from the compressor since the morning visit; patient tranquil and in good spirits.

1 P. M.—Feeble pulsation still perceptible, but the tumour loses more of its elastic feel, and it is evident that the formation of fibrine is going on; limb of natural warmth; numbness less; pad screwed down so as to stop the pulsation completely.

3 P. M.—No pulsation since last report; the aneurismal swelling has entirely lost its elasticity, and appears to be completely solidified; very little uneasiness from the instrument, which is left undisturbed. Twenty-four hours since its first application.

8 P. M.—Pressure entirely removed by lifting the spring; tumour still without the slightest pulsation, and as solid as a stone; compressor re-applied after a few minutes, but with diminished power.

June 2, 6 A. M.—Patient has had some sleep, and has no discomfort or inconvenience from the truss; tumour solid, contracted, and pulseless; temperature of the whole limb natural; sense of numbness greatly diminished; complains of a little pain in the fore part of the leg, and slight thirst.

8 P. M.—Remains as at the morning visit nearly, but feels more comfortable; continue the instrument as a security.

June 3, 10 A. M., 67 hours.—Has had a good night's sleep; tumour further reduced in size; temperature natural; posterior tibial artery felt beating feebly. The truss removed altogether; integuments under the pad scarcely reddened; patient quite comfortable, and general circulation tranquil; pulse 75; tongue clean; no thirst, bowels confined. ℞.—Ol. ricini ℥j. Sponge the limb with cold water.

8 P. M.—Bowels once moved by the oil; patient continues well and free from all complaint; tumour solid, and somewhat flattened in shape.

June 4, 10 A. M.—Patient slept well; has a little pain in the leg and instep, and is weak from confinement to bed and reduced diet; in other respects quite well. The instrument has not been re-applied.

Oct. 25th.—Nothing further to detail from the date of last report; the absorption of the tumour has been slow but progressive, and scarcely a vestige of it now remains. The patient is in excellent health, and has apparently quite lost the threatening symptoms of general arterial disease he had on his admission into hospital; he still, however, complains of a very slight sense of numbness about the inside of the knee, and a trifling degree of weakness of the limb; but these symptoms are gradually wearing away. He was discharged on the 26th Sept. for two months' sick furlough, previous to rejoining his regiment, it being thought inexpedient to subject him too soon to the very severe and fatiguing duties of drill.

At the risk of being thought tedious, I have given the notes of the foregoing case in detail, conceiving that it may be thought interesting to trace the progress of the cure. The visits, it will be observed, were made at short intervals; and I am of opinion that, in the treatment of aneurism by compression, it is of the greatest importance that the surgeon who undertakes the care of the case should be unremitting in his attentions to the patient. Much of the success depends upon his watchfulness, not only in regulating with nicety the stream of blood through the sac, and in watching for the favourable moment when it arrives to stop it altogether; but in alleviating, as far as possible, the sufferings of the patient from the continued pressure of the pad, by such delicate and careful manipulations, or shiftings of the instrument, as it is practicable to make. This is especially requisite in cases where a second or relieving clamp cannot be applied.

The critical moment, it appears to me, when the current of blood may be stopped altogether with effect, is when the deposit of fibrine has begun to take place, as evidenced by the loss of elasticity, and increasing firmness of the tumour: and when the collateral circulation has become fairly established, as indicated by the restoration of the natural temperature of the limb, though the stream may perhaps very judiciously be suspended now and then, for a short interval of two or three hours at an earlier period, and then be permitted to flow again as before. These occasional checks throw the impetus of the arterial current with new and greater force upon the anastomosing branches, thus tending to their enlargement.

The result of the above case is interesting, from the rapidity of the cure, as well as its apparent completeness under what seemed to be adverse and discouraging circumstances: and it is satisfactory to remark that no local injury whatever was sustained from the instrument, although the pressure was continuous, there having been no means of applying a second elsewhere in the line of the artery, as recommended by Mr. Bellingham, and practiced with so much relief in cases of popliteal aneurism. The integuments under the pad were hardly reddened, and the sufferings of the patient after the first few hours were comparatively trifling.

The instrument used in this case, as a *Presse Artère*, was a very simple modification of an improved hernial truss invented by myself. The truss selected was a double one, with a strong spring, the extremity of which, on the left side, was slightly altered in its curve, so as to bring the pad directly over the external iliac artery, as it emerged from beneath Poupart's ligament. For the ordinary wooden pad of this truss were substituted two oval plates of steel, the upper one attached firmly to the end of the spring; the lower connected with the first by four long screws, so managed as to increase or diminish the space between the plates, thus enabling the surgeon to gain a small amount of additional power. To the lower plate was fixed a rounded piece of cork, covered with a cap of chamois leather, and modelled with a gentle ridge or elevation along the centre, which was invented to prevent undue pressure on the vein or nerve on either side, while the ridge itself pressed directly upon the artery. The perineal strap of a common truss was attached, which, when buttoned to the upper plate, augmented the resisting power of the spring, and, consequently, the additional force of the screws, which would otherwise be divided equally between the spring and the part compressed.

I am far from supposing the instrument above described to be perfect, but, in the absence of a more legitimate one, it was the readiest contrivance I could command, and it answered the purpose in this case extremely well. I have since learned that a somewhat similar apparatus was made use of, several years ago, by the late Mr. Todd, of Dublin, in his attempt—the first, I believe, that was ever made—at the cure of a case of femoral aneurism by compression. An account of that very interesting case, and of the instrument, will be found in the third volume of the Dublin Hospital Reports.

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25. *Ligature of the External Iliac Artery.*—Dr. Charles Halpin communicated to the Surgical Society of Ireland a case in which he applied a ligature to the external iliac artery to arrest hemorrhage from the femoral, produced by the latter artery being opened by the ulceration of a bubo in the right groin. The subject of it was a soldier aged 21. Hemorrhage occurred on the 11th Sept., and again on the 12th, and on the afternoon of the latter the ligature was applied; on the 14th, 15th, 16th, and 19th Sept., venous hemorrhage occurred from the site of the bubo; and on the 20th, arterial hemorrhage; and on the evening of the last-named day, the patient expired.

A post-mortem examination was made on the 21st day of September, nineteen hours after death. Assisted by Dr. Roe and Mr. Brice, a most minute examination was made of the parts connected with the disease and the site of the operation. The peritoneum, which had not been wounded in the operation, was found adherent to the cæcum; it was easily torn in separating it from this part. The artery was exposed from the bifurcation of the aorta to the middle of the thigh. The ligature applied on the 12th instant to the external iliac was about two inches above Poupart's ligament, and was very nearly cast off, being retained by some portion of the external coat only; the artery had not been disturbed in the operation to a greater extent than permitted the needle to pass under and between it and the vein.

It was evident that the hemorrhage immediately preceding death had come from this portion of the artery, notwithstanding its being filled from the ligature to the giving off the internal iliac artery with a very firm coagulum.

About two inches below Poupart's ligament, there was an *aneurism* of the femoral artery, capable of containing a small chestnut. The origin of the profunda femoris was implicated in this aneurism.

The femoral vein was destroyed for about three inches of its course, below Poupart's ligament.

The ulceration connected with the bubo, reaching the aneurismal sac, eroding its coats, originated the hemorrhage on the 10th instant, which terminated in the death of the patient on the 20th; but I am strongly of opinion, at the same time, that the blood which came away on the 14th, 15th, and 16th instants, and which had all the character of venous blood, descended through the iliac vein, and escaped by the femoral vein, which had been destroyed by ulceration. I am not aware how far such a source of hemorrhage has been observed or suspected before, but it strikes me that the possibility of such an occurrence is worthy of the attention of the profession.—*Dublin Medical Press*, May 14th, 1851.

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26. *Hernia—Operation without opening the Sac.*—The subject of hernia is a most important one to the practical surgeon; and there is no class of cases which requires so much study and investigation. The affection is one which is so common, and so likely to be brought under his notice at any period, in its most difficult and dangerous aspects, that he is bound to make himself acquainted with its nature and treatment, and with the various circumstances which so frequently obtain, to modify both. It at first sight appears somewhat surprising that there should be so much difficulty connected with an apparently simple subject, and that there should have arisen so much controversy upon the most effectual modes of combating the dangers which are induced when a patient is labouring under a strangulated hernia: for upon no one subject, perhaps, has so much been written as upon this. The writings of Cooper, Pott, and Lawrence, with many others, bear testimony to the laborious investigation which these eminent men have been engaged in to ascertain the precise nature of the affection, and to simplify the treatment of it both by operation and other means. This surprise, however, ceases when we come to see the disease at all on a large scale; for then it is we find that there are no two cases exactly alike; and that, in one case after another, circumstances obtain or arise which the surgeon has not noticed before, or has altogether forgotten; and he accordingly finds that he is compelled to modify his mode of operation and his subsequent plan of treatment, according as the singularity or gravity of these circumstances is met with. Thus it is that he who wishes to make himself well acquainted with the pathology of hernia, and with all the circumstances which are constantly interfering to modify its treatment, should not miss a single opportunity which may present itself of observing every case which may fall in his way. It may be stated as a great probability that, with every fresh case, something new will be learned. Hence we consider a faithful and accurate report of all individual cases of hernia to be most especially useful. More of course will be learned by the actual ocular observation of such cases; nevertheless, an attentive observer will add to his store of knowledge by reading the records of such when he cannot see them for himself.

The point which has been of late, and is now mostly under discussion, is as to the propriety and expediency of performing the operation for strangulated hernia without laying open the sac: other matters connected with the treatment of the affection—such as operating at an early period after strangulation, not using too prolonged taxis, and refraining from the employment of powerful aperients too early after the stricture upon the gut has been relieved—have been satisfactorily settled in the minds of all judicious surgeons; but the one point under consideration is that just mentioned, and it is likely to agitate the minds of practitioners for some time yet; at all events, until a larger mass of well-recorded cases of hernia treated by the two separate methods of operating with and without opening the peritoneal cavity, shall be brought home to the profession. It must be confessed by all those who have paid any particular attention to this very important subject, that the data are not yet sufficient to justify the surgeon in coming to anything like a correct conclusion as to which is the safest and best mode of operating generally; nevertheless, the researches of Key, Luke, Gay, and Hancock have contributed much to enlighten the profession on this matter, and the minds of surgeons are thus imbued with the necessity of considering every case of hernia with extreme care before they determine upon the manner in which such and such a case should be treated. The feeling is gaining ground that the operation without opening the sac is applicable to very many cases of strangulated hernia, where a few years ago the peritoneum would have been opened without the least consideration, and supposedly as a matter of necessity; that also the danger of the proceeding is much lessened if so delicate and easily inflamed a structure as the peritoneum is not meddled with. Experience has already amply shown the truth of this; but, on the other hand, it cannot be denied that there are many good surgeons who look upon this mode of operating not only with great suspicion, but who consider it to be both unsatisfactory and more dangerous than when the sac is opened, its contents brought into view, and the condition of the parts well ascertained before they are returned into the abdomen. Those who are advocates of the former method urge as arguments in its favour the great danger of peritonitis where the membrane is cut into and the intestine itself is rudely handled—in fact, the circumstances that in almost every case which is fatal after the ordinary operation, a greater or less amount of inflammation of the peritoneum and its consequences is found: and hence the immunity which obtains when a simple incision is made through the overlying textures. Those who oppose this plan urge—and justly too—that it is not applicable to a great number of cases, and that there must always be an extreme difficulty in selecting those to which it really is applicable: moreover, that the peritoneum is not so liable to be inflamed by a simple incision into it as is imagined by some, and that it is impossible to tell at the time of operation whether or not the stricture be fairly relieved, and whether the intestine itself be in a fit state or not to be returned into the belly. Such, then, is the position which this question at present assumes, and is likely to maintain, until the experience of a large number of cases has been fully brought before the profession. It therefore, we conceive, becomes the duty of every one who has the opportunity of bringing forward facts which may throw light upon this subject, to do so; and we shall make it a point of recording every case of hernia in the reports which it is our duty from time to time to make from among those which are treated in this hospital.

Before proceeding to relate two instances of strangulated hernia where the operation has been successfully performed without opening the sac, we will allude to the report of a case which we inserted from this hospital a few weeks ago. In this instance it will be remembered that the patient was an old man, in whom strangulation of the intestine had existed for less than 24 hours, and everything appeared to be favourable for the operation without opening the sac; and yet, on post-mortem examination, a considerable portion of intestine was found to be in a condition quite unfit to be returned, although the stricture had been effectually relieved by cutting it outside the peritoneum. We at that time made the remark that this very case illustrated the difficulty which must necessarily exist in arriving at a correct conclusion as to the state of the parts inside, the hernial sac, and was *per se* an instance to show the danger and inexpediency of returning a portion of intestine which has been constricted, even for a short period, without first ascertaining its condition. We have now, on the contrary, to relate two instances where the same kind of operation has admirably succeeded, and which thereby tell as arguments in favour of operating without opening the sac, if possible.

Mary Ross, aged 48, married, was admitted into King's College Hospital with a strangulated femoral hernia, on Tuesday, November 26th. She stated that on Monday evening, at 8 P. M., whilst sitting before the fire, she was suddenly seized with a severe pain in the lower part of her belly. She at once sent for a medical man, who gave her an emetic which acted violently, and increased the pain under which she was suffering. About 11 o'clock of the morning she was admitted she first herself noticed a tumour in the right groin, which was very tender to the touch. She had never observed a swelling there before. At 2 P. M. she was sent into the hospital, *no attempt whatever having been made to return the hernia before admission.* Mr. Fergusson pronounced the tumour to be a femoral hernia: the patient was at once placed under the influence of chloroform, and a careful attempt was made to return the swelling by the taxis; but Mr. Fergusson, finding that it did not yield in any way, determined to operate without further delay. Making a very short incision over the hernial tumour, he dissected through the separate tissues, and carried the knife inwards, and divided Gimbernat's ligament, outside the sac: the contents were at once returned into the belly; little blood was lost; the edges of the wound were united by sutures; a compress and bandage were applied.

27th.—This patient suffers no pain; has slept well the preceding night, but the bowels have not been opened since the operation.

28th.—Bowels have been opened by means of an enema this morning. The patient feels comfortable.

Dec. 3d.—Stitches have been taken out of the wound, and this is dressed with adhesive straps.

Discharged on the 7th.

Lydia Boothby, æt. forty-six, married, and mother of eleven children, has had a crural rupture on the right side for the last six years, and has worn a truss for the last twelve months. On the night of December 23d, at ten, she was seized with vomiting and a dragging pain in the stomach, whereupon she attempted to return the tumour with the help of her husband, but found she was unable to do so. These efforts at reduction were continued all night; and, as they were unsuccessful, she applied and was admitted into the hospital. Next day, Dec. 24, she had vomited fæcal matter before she came in. She had no vomiting when admitted, but complained of a severe dragging pain at the stomach, and shooting pain over the abdomen. There was a tumour, the size of an egg, in the left groin, turning up over Poupart's ligament: it was hard, and felt nodulated at the upper part, but was smooth and fluctuated at the lower. Mr. Fergusson saw the patient, and, finding that he was unable to return the hernia, proceeded to the operation. He first made a very limited incision just over the neck of the tumour, and divided the separate tissues over the sac; he then passed the knife upwards and inwards, and cut Gimbernat's ligament, and was then enabled to pass the contents of the sac into the belly without opening the sac. It was necessary, however, after dividing the ligament, to cut some fibres between that tissue and the sac; the rupture after this was returned with the greatest facility.

On the same evening this patient found herself much relieved; there was no pain, no tenderness nor sickness.

On the next day her bowels were freely opened, and the only thing she complained of was a little fever, which required some saline medicine. The wound soon put on a healthy appearance, and she rapidly recovered.

Both these cases are interesting, inasmuch as the same operation was put in force in either, and that, too, with the greatest success, although the two cases were not by any means alike. The comparatively simple and harmless operation without opening the sac was performed, and both patients recovered without a single bad symptom. Both cases illustrate the fact that there are certain instances of strangulated hernia to which this peculiar operation is decidedly applicable; and they teach us what are the circumstances which will lead the surgeon to judge that he is dealing with a fit case for such a mode of procedure. In the first patient, the conditions were just those which are considered to be the most favourable for attempting the operation without cutting into the peritoneum. The woman had never suffered from hernia: in fact, it was quite recent descent of bowel; the parts had not been suffered to remain long down, and, moreover, it was a femoral hernia, which is probably that kind of hernia in which the operation of not opening the sac is most likely to succeed frequently. The anticipations of the surgeon that in such a case the operation might be completed without difficulty were verified. In the second case, the same conditions did not obtain; for here the hernia was not recent, but was of six years' standing, and for twelve months the patient had worn a truss; and it might with propriety be expected that some changes would have been brought about in the sac which would oppose a successful attempt at reducing the hernia without an exposure of the cavity. Nevertheless, there was an equal amount of facility in either case in completing the operation. There was also this difference in the two cases—in the one it has been seen that no attempt whatever had been made to return the hernia, either by the patient herself, or by a medical practitioner; in the second instance, both forcible and prolonged attempts were made by the patient and her husband to push the tumour back. The circumstances in each were therefore different, and certainly much more unfavourable in the latter case. Still this rude handling of the parts had not appeared to produce any mischief. A great point in the success of both cases consisted, doubtlessly, in early recourse to operation—a measure which should always be adopted whenever it is considered that the employment of the knife is necessary. It must not, however, be considered that in all cases like these just mentioned, and more especially the first operation of not opening the sac, will invariably succeed or can be accomplished; nor is it to be supposed that the intestine must necessarily be in a fit condition to be returned because strangulation has existed only for a few hours, and because those symptoms which not unfrequently indicate a gangrenous condition of the intestine are not at all perceptible. The case of the man first alluded to shows the impossibility of deciding this question; for although in this instance strangulation had not existed for twenty-four hours, death rapidly ensued after operation, and the intestine was found in a very disorganized condition; and it is often quite impossible to judge, from the absence of symptoms, as to the comparatively healthy state of the contents of a hernial sac. A few days ago we were present at an operation in a remarkable case of strangulated femoral hernia in a very aged person, where there were not the slightest symptoms to indicate that the intestine was in anything but a healthy condition. The operation without opening the sac was performed. The stricture was fully relieved, but the patient died; and on post-mortem examination a considerable portion of intestine was found to be in a semi-gangrenous condition. This uncertainty as to the state of the intestine must then be looked upon as one of the great impediments to, and difficulties in connection with, the adoption of this particular plan of operating. Still it must be hoped that a careful observance of signs and symptoms, and the experience of a greater number of cases than have hitherto been brought forward, may be able to enlighten the surgeon on this serious point, and enable him to avoid the dangers which must necessarily arise if he adopts too hastily or too generally either plan of operating.

Mr. Fergusson has lately adopted a mode of operating by a very small external incision through the skin, just over the neck of the tumour. It was formerly his custom to recommend and practice much freer incisions, of various shapes, over the surface of the tumour; but he now proceeds in a manner somewhat like that recommended by Mr. Gay in his very beautiful work on Femoral Hernia: by means of this incision he is enabled to get easily at the Gimbernat's ligament, which it is generally necessary to divide. Should, however, a larger incision be found necessary, it is very easy to extend it over the tumour. Mr. Gay practices his incision, which is even more limited than that of Mr. Fergusson, by the side of the neck of the hernia, and does not interfere with the tumour at all if he can possibly effect his object without it. Mr. Fergusson, in both the cases narrated, made a small cut just over the neck of the hernia, but interfered little with the main portion of it. The advantage is that so small a wound very soon heals up.—*London Med. Gaz.*, Jan. 1851.

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27. *Puncture Wound of the Abdomen—Recovery.*—Dr. H. C. Field communicated to the Surgical Society of Ireland the following remarkable case of puncture wound of the abdomen, accompanied with an opening into the intestinal canal, and great hemorrhage, in which the patient recovered:—

On the 22d of a severe November evening, I was requested, in a very hurried manner, to visit a gentleman who, I was told, had, while sitting at dinner, some disagreement with a member of his family, and, in a fit of irritation, exclaimed that he was tired of life, and had immediately inflicted some serious injury on himself. On entering his room, I perceived that it bore a most appalling appearance: the floor was covered with blood, and my patient was extended on a sofa in a remote corner of it, apparently lifeless. I could not feel any pulse. I immediately called for some brandy, which I obliged him, with great difficulty, to swallow some of. I soon perceived that blood was flowing in considerable quantity from a wound in his *abdomen*, which was situated to the left side of, and near to, the umbilicus. I soon learned that the wound had been inflicted by a large *carving knife*, which, from the *stained* appearance it presented, and from the account I received, as well as from the nature of the wound, I judged had passed into the cavity to the distance of *five inches*, in a direction obliquely backwards, downwards, and to the left side. The blood, which was of a dark colour, flowed freely in *one continued stream*, and hemorrhage was so excessive as to excite an apprehension of immediate dissolution. However, having failed to suppress the hemorrhage by firm compress and bandage, and convinced that a few minutes more of such bleeding must end in death, I introduced to the bottom of the wound a *dossil of lint*, the end being kept outside, and applied over it a graduated compress and a broad bandage firmly. This succeeded in arresting the further flow of blood, and a cordial draught, with forty drops of laudanum, was then administered. A feeble tremulous pulse at the wrist could now be felt, but he appeared in a sort of faint. He was bathed in a cold sweat, his extremities lay still and motionless, he vomited at intervals, and his urine and bloody feces passed unconscious to him, and his respiration was slow and laboured. In this state, almost bordering on death, he remained for seven hours. About this time the vital power first showed a disposition to reaction. He expressed, in a few broken accents, the general uneasiness felt, and complained of pain and numbness in the lower extremities, particularly in that of the left side: this, together with a peculiar restlessness, disturbed him during the remainder of the night, which was passed without any sleep, notwithstanding the anodyne he had taken.

23d. A medical attendant remained with him during the night; there was no recurrence of hemorrhage; he still appeared in a state of extreme debility, and felt great nausea, which occasionally increased to hiccough and vomiting: he also complained of numbness and pain extending down the left limb to the foot; there was slight tenderness about the wound on pressure; pulse 120, feeble, and irregular. With a view to relieve the state of the stomach, as well as to allay the general irritability, and ensure perfect rest, I directed the saline effervescing mixture every four hours, with fifteen drops of laudanum; also fomentations to the abdomen. Evening: He still complained of pain and numbness in the thigh and leg; the tenderness of the abdomen had increased; there was thirst; pulse 110 and feeble; tongue white and furred; skin hot and dry; stomach relieved. Ordered to continue the draughts at longer intervals, also the use of ice, and the fomentations every four hours.

24th. He had some quiet and refreshing sleep during the night, and felt himself relieved; his pulse was 90; skin cool; no sickness of stomach; has had two stools, each containing a large quantity of dark clotted *blood;* pain and numbness in the left limb not so troublesome; tenderness of the abdomen on pressure continued. Ordered the fomentations to be repeated.

25th. He had several evacuations, each containing a quantity of clotted blood;

fever much less; pulse 90; tongue foul; pain and numbness in the extremity still distressed him; there was little or no pain about the wound; the dressings came away, when a quantity of *feculent* matter, mixed with blood and some pus, was discharged.

26th. Has had some refreshing sleep, and was much better this morning.

27th. Continued to improve; the evacuations were free from blood; he now complained of occasional starting in the left limb, in addition to the pain and numbness, which still continued, though in a less degree; the wound discharged healthy pus unmixed with feculent matter; he was free from fever.

I think it unnecessary to delay the Society by detailing the daily reports: he continued to improve daily: the wound gradually healed. The peculiar sensations of numbness, pain, starting, and tingling in the left leg and thigh, however, continued, and were occasionally very distressing, although on the whole less severe and frequent in their attacks.

On the 8th of December he attempted to stand, but the left leg was so weak as to yield beneath his weight.

January 2d. Since the last report, his health and strength considerably improved; for some time the left extremity was nearly paralytic, though frequently attacked with paroxysms of pain and numbness, which latter he described as more troublesome and distressing than the former. These paroxysms, however, were so slight and so few that every hope was entertained of his perfect recovery at no very distant period.

I cannot close this statement without directing the attention of the Society particularly to some of the circumstances of this case, as I conceive they are calculated to excite our astonishment, as well as our admiration, at the extraordinary resources of nature, whereby she is enabled, under the most unfortunate circumstances, to preserve the life of a human being. In this case we have evidence not only of the peritoneum, but also of the intestinal canal, being opened.

I should presume, from the feculent quality of the discharge, that some part of the colon was injured. What blood-vessel was wounded cannot with certainty be affirmed, but most probably some large branch of the vena portæ, such as the inferior mesenteric, or one of the colic veins. I conceive there can be no doubt, from the peculiar sensations complained of in the lower extremities, that some branches of the lumbar plexus of nerves must have been divided, or otherwise injured, at the time of the accident. It appears a strange anomaly in the history of wounds of the abdomen, that so little peritoneal inflammation was excited in this case, notwithstanding the effusion of blood and feculent matter. May we not in some degree account for the fortunate absence of this, so common a result in general, either by the copious hemorrhage which immediately followed, reducing the system to so low a condition as to retard the reaction in the circulating organs, and so oppose the attack of local inflammation or general fever, or a coagulum of blood may have so formed around the wounded vessel as that further bleeding and effusion into the cavity were restrained until the adhesive inflammation set in, by means of which a permanent recovery was effected in a surprisingly short time, for we find him in less than a fortnight free from every unpleasant symptom, excepting the pain and numbness in the lower extremity, which may be referred to the injury of some of the nervous filaments of the limb? I have always entertained the belief that we are never too old to learn. I know, although the case recovered, that there was unavoidable error in some of the practice, and I hope to hear some remarks upon it from some of the experienced surgeons I have the honour to see around me.—*Dublin Medical Press*, April 16, 1851.

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28. *Tracheotomy in a Child thirteen months old successfully performed for Œdema of Glottis.*—T. L. **Whistler** communicated to the Surgical Society of Ireland (Feb. 8) an interesting case of œdema of glottis in a child only thirteen months old, caused by the taking of boiling water into the mouth, in which antiphlogistic measures having failed to afford relief, tracheotomy was successfully performed.

The subject of it was an unusually fine boy, brought to Mr. W. at eleven o'clock on the morning of the 13th Jan., having, as stated by his mother, swallowed boiling water from a kettle removed to the side of the fire-place, on a level with the child when standing, at a moment when left alone. It was crying violently, and evidently suffering much pain; the face was greatly flushed, and the pulse much accelerated; there was, however, no vesication about the mouth, and but slight tumefaction observable on the fauces. I directed four leeches to the throat, and after an emetic (which I subsequently found was not administered), a grain of calomel and quarter of a grain of hippo to be given every second hour. I again saw the child at three o'clock; the leeches had freely bled, and the calomel was punctually dropped on the tongue; the breathing was rapid, but not oppressed; the usual febrile symptoms intense. When I again visited the child at eight o'clock in the evening, every alarming symptom had set in—difficult croupy respiration, pale bloated face, cold skin, pulse scarcely to be felt, with inclination to stupor. The child was dying, and no prospect of saving life was left but to open the trachea—an opinion which was at once concurred in by Dr. Darby, who kindly and effectively gave me his assistance.

After the first incision, the convulsive struggles of the child, the venous hemorrhage, the rapid working of the trachea, and the insufficient light procured in the cabin, rendered the remaining steps of the operation distressing, and more than usually tedious. Not being at the moment supplied with the double hook, I laid hold of the trachea with a common tenaculum, which, being divided, the air forcibly rushed out, followed by a discharge of blood and mucus. From the situation of the child, and anxious to stop the hemorrhage as quickly as possible, the canula was introduced sideways without removing any portion of the trachea. In a few seconds the child breathed freely through the wound, occasionally forcing up large collections of bloody mucus, consciousness returned, and wine and water was shortly afterwards swallowed. The examination of the fauces with the finger conveyed the impression as of a large cherry in the situation of the epiglottis. Directions were left with the mother to remove the mucus from the canula with a feather and by suction, and to continue the powders of mercury and chalk.

On the following morning we found that the child had passed a tolerably quiet night, discharging a profuse quantity of mucus through the tube, and much troubled with cough; the fauces were much swollen; the epiglottis hard and very tumid, the uvula presenting the appearance of boiled parchment. A blister was applied ever the sternum, the mercury and hippo continued, with nourishing diet. It is unnecessary to record each day's report of this case; severe bronchitis threatened on two occasions, but was successfully subdued by active treatment. I may mention that so intense was the injury sustained by the larynx, that six days elapsed from the operation before the tube could be removed, each trial made by placing the finger on the opening being followed by a most distressing cough and dyspnœa. The child became much emaciated, but is now daily improving in appearance and spirits.

I conceived it might not be unimportant to bring forward this case as a record amongst a class of accidents frequently to be met with in hospital and dispensary practice, not from any novelty in the mode of treatment adopted, or the success which, under similar unfavourable circumstances, has attended its performance in the hands of others, but that every additional case to those already published may inspire the junior portion of the profession with confidence in having recourse to the operation before too much valuable time has been allowed to pass over, and thus that an operation of such unquestionable advantage be not brought into disrepute by undertaking it when no fair prospect of success remained. Its difficulty is universally acknowledged to be greater in the child than in the adult, owing to the smaller size of the trachea, its generally increased distance, the hemorrhage, the struggles and convulsive startings of the infant, which must often tend to embarrass the most experienced surgeon. These difficulties are in part removed by seizing the trachea with a tenaculum—a plan first recommended, I believe, by Dr. Murray of Dublin in 1827, improved on by Mr. Carmichael, who used a double hook, and removed with a scissors a circular portion of the tube, as successfully adopted by him in the case of a child, aged two years, attacked with inflammation of the glottis from boiling water. By some the removal of a portion of the trachea is not recommended. M. Velpeau deems the "simple incision always sufficient for the introduction of the canula, whilst the removal of a slip of the trachea is likely to be followed after cicatrization by an irremediable diminution of its diameter."

Mr. Porter is of opinion that, if the operation be performed on the larynx, there can be no objection to removing a portion, "because the wound is not extensive, and the hemorrhage must be trivial; but the trachea lies deeper, there is more likelihood of meeting with a troublesome or embarrassing flow of blood to delay the operation, and, even supposing that no vessel of consequence is wounded, the patient at every inspiration sucks in a quantity of blood from the open sides of the incision, and the cough, expectoration of bloody mucus, and other harassing symptoms, are continued."

In the present case, I was influenced by the great necessity there existed to stop all further bleeding, and give at once a supply of air, from the want of which at one time I thought the child had expired.

In conclusion, I wish to impress on the junior portion of the profession present that the failure of tracheotomy in œdema of the glottis, the result of taking boiling water into the mouth, would seem to be in general attributable either to the operation having been inefficiently performed, or delayed until congestion or effusion of head or thorax had set in. The present case was one which held out but faint hopes of ultimate recovery, owing to the age of the infant, the unfavourable season of the year, and the impossibility of securing a warm temperature in the room, which was situated on a damp earthen floor.—*Dublin Med. Press*, March, 1851.

29. *Extirpation of Neuroma without Injury to the Nerve*—Formerly it was the habit to extirpate neuromatous tumours in totality, removing with them the portion of the nervous cord engaged in the tumour. The division of the nerve, when a large one, necessarily occasioned many inconveniences, as paralysis, contraction, &c. Subsequently, however, it was ascertained that the tumour involves the cellular tissue only, which envelops the nervous filaments, leaving the latter intact. Hence the evident indication that we ought, if possible, to dissect out tumours of this kind, and leave the nervous cord intact, or at least undivided. M. Bonnet, of Lyons, has performed an operation which shows the possibility of fulfilling the indication now laid down in cases where, some time ago, complete extirpation would have been resorted to.

A patient, aged 56 years, was affected with a tumour in the ham, arising from injury. The tumour had continued to grow slowly for nine years before it gave rise to any inconvenience. Some lancinating pains were then experienced, and the pains gradually augmented during two years, until they became insupportable. On examination, M. Bonnet found a tumour, about the size of a hen's egg, in the ham. Although the tumour presented pulsations isochronous with those of the heart, yet the pulsation ceased on pushing the tumour out of the traject of the popliteal artery. It was, therefore, probable that the tumour was merely neuroma of the popliteal nerve. Having first employed ether, M. Bonnet cut down on the tumour, and found that it was traversed nearly in the centre by the internal popliteal nerve. The tumour was now carefully divided, until at length the nerve appeared in sight. It was intact, and was separated without much difficulty from the tumour, which latter was enucleated from its sac and turned out. All pain, cramp, &c., now disappeared, and after the healing of the wound the patient was discharged perfectly cured.

30. *Congenital Obliteration of the Vagina and the Mouth of the Uterus.*—Dr. Debrou, surgeon of the Hôtel Dieu of Orleans, has recorded (*Gazette Médicale de Paris*, Jan. 18th, 1851) a case of complete congenital obliteration of the vagina, with imperforation of the neck of the uterus, in which he re-established the vaginal canal and the orifice of the uterus. The patient subsequently married, became pregnant, and was delivered by the forceps of a dead infant. Labour was accompanied with convulsions, and followed by metro-peritonitis, and the patient died on the tenth day.

31. *Treatment of Stricture of the Urethra with Gum-elastic Catheters.*—[The *Dublin Medical Press* (April 16th, 1851) contains some interesting remarks on this subject, with a case by R. G. H. Butcher, Esq.]

John Clarke, æt. 40, a servant, was admitted under my care into Mercer's Hospital, February 28, 1851. His early life was very dissipated, and he refers to the fact of having had a succession of claps. So far back as twelve years ago, he was first seized with retention of urine, and relieved by the catheter; for three years before this he was labouring under great difficulty in passing water, frequent micturition, and many of the harassing symptoms of stricture. Dating from that period up to the present, he has had four attacks of retention of urine, which were relieved by instrumentation, warm baths, enemata, &c. &c.; while, during the intervals, he has been under the treatment of different surgeons, and generally with marked good effect.

Five months previous to the above date, he was seized with retention, and the urine drawn off by an eminent surgeon in the following manner: No ordinary-sized instrument could be got into the bladder, so he had recourse to the following procedure. The end of a long piece of catgut was made to traverse the contracted urethra fairly into the bladder, and over this, acting as a director, was slid a fine gum-elastic catheter; the catgut was then withdrawn, and the urine flowed off. During the consecutive five months from this date to the period of his admission, he never sought the aid of surgical advice, though for the last month the stream has never been thicker than a fine packthread, and very frequently the bladder has been emptied drop by drop.

On the night before this application to the hospital he had been drinking, and early in the morning was admitted with retention of urine. An ineffectual effort had been made to pass a catheter before I saw him, and I did not think it prudent to try again. By my directions a very full cathartic enema was administered, which acted freely. He was placed in a warm bath, and a full opiate given. When in the bath about a quarter of an hour, the urine began to dribble away, and the bladder emptied itself. I made no further examination then, but ordered a hip-bath at night, and an oil draught with tincture of opium immediately after.

March 1st. The bladder has perfectly emptied itself, and I saw the patient make water to-day in a stream not thicker than a thread, accompanied by great straining. On examining the urethra externally, it is hard and firm to the touch, about two inches and a half from the orifice, and there is a firm, hard, unyielding mass behind the scrotum, in the perineum. On exploring the canal with a No. 7 bougie, it was abruptly stopped at the point above noted; instruments of various sizes were tried ineffectually, until a No. 1 gum-elastic catheter, mounted on a firm stilet, was made to pass. This grated along a firm unyielding structure, at least an inch in extent: the instrument then moved freely on, until in front of the bulb, when it met with the same kind of resistance as that which it had just overcome. This part of the urethra was so contracted, that with great difficulty the catheter was made to pass, and, having arrived at the membranous portion, it was arrested altogether. Having gained so much, I commanded the patient to let the instrument remain in as long as it did not produce much uneasiness there. He was able to wear it for two hours and a half. On its being withdrawn, ordered—

℞ Mist. camph. ℥i;
Tinct. opii gutts. xxx;
Liq. potass. gutts. xv. M. Ft. haust.
And immediately a hip-bath.

2d. Made trial of the No. 1 catheter again to-day, but with no better effect than on yesterday; it remained wedged in the stricture for three hours, and was borne without pain. The draught and hip-baths as on yesterday, and at night an oil draught with opium.

3d. The stream of urine passed to-day not enlarged, but attended with less straining. I passed the finest gum-elastic catheter made, and succeeded in getting it into his bladder. Retained it there in the usual manner, by means of an ivory ring and tapes. An opiate immediately, and a hip-bath at night.

4th. The catheter retained in the bladder all night; suffers no inconvenience from it; takes out the wooden peg occasionally to pass water. Repeat the anodyne draught and hip-bath at night.

5th. Yesterday, on getting into bed after going to stool, the instrument slipped out. I saw him immediately after, and by very gentle manipulation slipped in a No. 2 gum-elastic catheter firmly mounted, without giving the least pain; retained it as before; administered an anodyne immediately after, and ordered a hip-bath at night.

6th. Has suffered no pain from the presence of the instrument since yesterday; relieves the bladder through it occasionally, by removing the wooden peg: slight purulent discharge from the urethra, showing the effect of pressure on the strictured parts. To have a hip-bath and anodyne at night.

7th. Slept all night; feels no uneasiness from the catheter, which has not been disturbed for forty-eight hours. Repeat the hip-bath and anodyne at night.

8th. Withdrew the catheter; slightly incrusted with lithic acid deposit, it being retained in the bladder seventy two hours; has suffered no inconvenience from it; passed a No. 3 gum-elastic catheter firmly mounted; for a short time it was resisted at the membranous portion of the urethra, but in five or six minutes was allowed to glide into the bladder; retained it as before; administered an opiate immediately, and to have a hip-bath at night.

11th. Suffers no pain from the instrument, though undisturbed for the last seventy-two hours; withdrew it, incrusted with lithic acid deposit; purulent discharge from the urethra not increased; passed into the bladder a No. 4 gum-elastic catheter: retained it as before; after doing so, ordered at once—

℞ Mist. camph. ℥i;
Tinct. opii gutts. xxv;
Liq. potass. gutts. xv. Ft. haust.
An oil draught at night and a hip-bath.

12th. Feels very comfortable; bowels gently freed, without pain; no uneasiness referred to the bladder. Omit the opiate at night; the hip-bath to be repeated.

14th. Some urine and pus passes at the side of the catheter, indicative of the dilatation of the contracted parts; introduced a No. 5 gum-elastic catheter to-day. Stopped the opium; hip-bath at night.

16th. Urethra and bladder so quiet, passed in a No. 6 gum-elastic catheter, and retained it as before; immediately after gave his opiate and alkaline draught; hip-bath at night.

20th. Last night the instrument slipped out; I tried this morning to pass it, and could not readily do so; therefore administered a full opiate, placed him in a warm hip-bath, and in an hour after, without the least difficulty, passed the same catheter into the bladder, and retained it there.

22d. Passed into the bladder a No. 7 gum-elastic catheter, and immediately after put him into a hip-bath, and gave a full opiate, and at night the bath to be repeated.

26th. Has had a hip-bath every night since last report, but the opiate was suspended; removed the No. 7 catheter from the bladder; though creating no irritation, yet I wished to substitute a larger one. This last was undisturbed for ninety-six hours; scarcely any purulent discharge from the urethra; the urine let off by it, four or five times in the twenty-four hours, is quite clear, deposits no sediment on cooling, which, taken together with the patient's feelings, point to, and substantiate the fact that there is no irritation of the bladder. Tried to pass a No. 8 gum-elastic catheter, but failed; administered an opiate, and had him placed in a hip-bath, and I returned in two hours, when I readily passed the No. 8 instrument into the bladder, and retained it there.

29th. Has not had the least annoyance since last report; the urine was quite natural in colour, and no mucus or sediment deposited on cooling. I withdrew the No. 8, and passed into the bladder a No. 9 gum-elastic catheter, and retained it as before. Hip-bath every night.

April 1st. Removed the No. 9 instrument and quickly introduced a No. 10

gum-elastic catheter, and fastened it as before. Hip-bath and an oil draught with opium at night.

2d. In going to stool this morning, the catheter slipped out, but without difficulty I replaced it. To have his hip-bath.

6th. Is not suffering the least pain or inconvenience from the presence of the instrument. There is merely a trace of pus from the urethra, and no evidence whatever of irritability of the mucous membrane of the bladder. On this morning I readily introduced a No. 11 gum-elastic catheter firmly mounted, and retained it as before; an opiate was given soon after, and a hip-bath ordered at night. On examining the urethra externally, the hardness and adventitious structure, deposited both anteriorly and behind the scrotum, are nearly all removed, and no pain whatever is elicited on pressure along the entire track of the canal. Not the least remarkable feature in the history of this case is the improved appearance and general health of the patient. He has lost the sallow, haggard look, and anxious countenance—those features so peculiar as to be almost pathognomonic of the affection under which he laboured; he has now pulled up flesh, and his entire appearance bespeaks happiness.

The mode of cure by the catheter—the practice adopted in this case—was introduced by the celebrated Desault, who made all strictures amenable to its employment. The treatment by this method has also met with warm supporters in the names of Brodie, Liston, and Miller. The former says: "When the gum catheter has entered the bladder, withdraw the stilet, and leave the catheter with a wooden peg in its orifice, which the patient is to take out whenever he has occasion to void his urine, it being at the same time secured by a suitable bandage. After three or four days, you may withdraw the catheter for twelve hours; or, if much suppuration is induced in the urethra, you may withdraw it for a longer period; then introduce a larger catheter than the first; and thus you may, in the course of ten days or a fortnight, dilate a very contracted urethra to its full diameter. This is a very certain and expeditious method of curing stricture."—*Brodie, op. cit.*, p. 51.

Mr. Liston, at p. 472, *Practical Surgery*, expresses himself to this effect: "If the operation has been performed on account of retention, or if it has been threatened—and it is very apt to follow the swelling which always supervenes more or less upon the use of an instrument in very bad stricture—it may be prudent to retain the catheter. This is a very efficient, safe, and quick method of freeing the patient from bad stricture. It matters not how small the foreign body may be. Nature soon sets about a process to free herself from it; the passage is widened remarkably, and a most profuse discharge established, so that within forty-eight hours the instrument, which had been grasped most tightly, lies now quite loose, and the urine flows along it; it may then be withdrawn, and a large-sized catheter or bougie immediately substituted without difficulty."

Now, as to the two points of practice in my case, the wedging of the catheter in the stricture day after day until it reached the bladder, and then the retention of the instrument, and the substitution of larger ones, according to circumstances, until perfect dilatation was accomplished, are borne out by Professor Miller, of Edinburgh, in an admirable paper on the treatment of stricture of the urethra by perineal section, read before the Medico-Chirurgical Society of Edinburgh, and published in the *Lancet* for March 22, 1851.

"We must not lose sight," says this eminent professor, "of the two modes of using the catheter and bougie, well adapted to the final subjugation of cases even of great obstinacy. The method of *tunnelling*, as it may be called, founded on the fact that immediate penetration of the stricture is not essential to its cure. Instead of a small bougie, one of medium size is selected, and is passed down to the contracted part, into the anterior portion of which the extremity of the instrument, made somewhat conical for the purpose, is sought to be insinuated. There it is allowed to remain for a longer or shorter time, according to the feelings of the patient, and such use of the instrument is repeated at the ordinary intervals. On each occasion the penetration may be expected to deepen; ultimately the whole obstruction having been removed, as it were, by instalments, the instrument glides unopposed into the bladder, and, from this high platform, the surgeon then proceeds in the ordinary work of final dilatation." "In my own experience, many an obstinate stricture has given way satisfactorily to this means, often without much or even any delay, and always without any unpleasant complication." "The other method is by tying in the catheter for forty-eight hours or thereby, a method well suited to the gristly and resilient stricture."

One of the striking features in the case just detailed is the fact that very little irritation was produced by the presence of the instrument, and this is the more remarkable when we bear in mind that the urethra was so narrowly contracted, in many inches of its course, as only to admit the finest catheter made; indeed so tight did it fit when it had reached the bladder, that it was with great difficulty moved either backwards or forwards. At the end of fifty hours, vital dilatation had taken place to such an extent that, when the patient went to stool, the instrument readily slipped out. Now, the increased calibre produced in the urethra was not attended at any period with very considerable amount of purulent secretion, and towards the end of the treatment it had nearly subsided altogether. During an uninterrupted period of thirty-seven days, this man had a catheter retained in his bladder, and through which the urine was voided for that time. By this means the fluid rarely or never came in contact with the walls of the urethra. To prevent such an occurrence, whenever the instrument felt loose, I always withdrew it and substituted a larger size, so as to prevent the urine trickling along its sides. There are other minutiæ to be attended to in the local management, which are closely watched here, and though apparently trifling, I conceive of great moment in warding off irritation. The first is, not to allow the catheter to project far into the bladder; and secondly, to permit a small quantity of urine always to remain in the bladder. By these precautions, the instrument is prevented fretting the mucous membrane of that viscus. After changing the catheter, a full opiate was in every instance immediately administered, and the patient placed in a hip-bath; indeed, to the constant immersion of the parts under treatment in hot water, the free exhibition of opiates and gentle laxatives, I attribute mainly the exemption from irritation and rigors which so strikingly characterized this case all through. I have selected the foregoing case to show that the most unpromising and advanced callous stricture may be brought to yield to the judicious application of the gum-elastic catheter—unfortunately a mode of treatment which, without good reason, has been allowed to fall into disuse.

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32. *Congenital Dislocation of the Head of the Radius forwards.*—Prof. R. W. Smith exhibited to the Pathological Society of Dublin a cast and preparation of this rare malformation of the elbow-joint, and made the following observations respecting it. In February, 1840, in a communication upon the subject of abnormal elbow-joints, Mr. Adams detailed the particulars of the case of a man named Horseman, whose right elbow-joint presented an example of congenital luxation of the head of the radius upwards and outwards, and exhibited a cast, showing the external characters of the deformity;* and in March, 1849, he brought before the notice of the Society the subject of congenital luxations of the head of the same bone backwards. Upon the present occasion, through the kindness of my friend, Dr. Mayne, I have an opportunity of exhibiting a cast and preparation of congenital dislocation of the radius directly *forwards*. I may here mention that the female who was the subject of this deformity had likewise congenital dislocations of the wrist and of the knee; to these, however, I shall not now allude, but shall confine myself to the consideration of the condition of the elbow-joint. The woman was about forty years of age, and had been long an inmate of the South Dublin Work-house; she died of an attack of acute dysentery in the early part of 1849, and the following were the results of the examination of the left upper extremity:—

The forearm was flexed upon the arm at a right angle, beyond which it could not be bent, and could only be extended so far as to form a slightly obtuse angle. It remained habitually in the semi-flexed position, with the hand midway between supination and pronation; neither of the latter motions could be fully performed.

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* Dublin Medical Journal, first series, vol. xvii. p. 505.

The joint, viewed upon its external aspect, presented a remarkable projection, formed by the outer condyle of the humerus, which descended so low as to be, in the semi-flexed position of the joint, nearly upon the same level as the commencement of the olecranon process of the ulna; it was, moreover, curved forwards and inwards, so as to present posteriorly a striking convexity; it was much larger and more prominent than the internal condyle, which, however, also seemed to be placed lower down than natural with respect to the ulna.

The summit of the olecranon, in every position of the joint, was placed above the condyles; but its lower portion, where it springs from the shaft of the ulna, was in a great measure concealed between these processes.

Directly in front of the enlarged outer condyle of the humerus, a rounded osseous tumour could be felt, which, as it partook of every motion imparted to the shaft of the radius, was concluded to be the head of that bone; as much of it as could be felt was of an orbicular form.

Comparing, in my mind, these appearances with those observed in the case of Horseman, whose elbow-joint I had frequently examined, and who was known never to have received an injury, nor to have suffered from disease of the articulation, there was no difficulty in arriving at the conclusion that the case afforded another example of congenital dislocation of the head of the radius; and the opinion that the luxation was congenital was further confirmed by the co-existence of the malformations of the right upper and of the left lower extremities, which I have already mentioned. There exists, however, this difference between the two cases, namely, that, in the present instance, the head of the radius is displaced forwards, while in that of Horseman, it is described by Mr. Adams as being dislocated upwards and outwards.

The muscles (which, although pale, were not remarkably attenuated) having been removed, the bones and ligaments were carefully examined. The lower extremity of the humerus presented no traces either of trochlea or capitulum, nor any evidence of these processes having ever existed. In place of them there existed a deep fossa or excavation, into which was received the great sigmoid cavity of the ulna, in such a manner that, when the forearm was flexed to a right angle, the coronoid process struck against the front of the humerus, and extension was at once checked by the olecranon coming in contact with the back of the same bone.

The outer condyle of the humerus, which was much larger than natural, and curved forwards, was deeply excavated anteriorly, in such a manner as to form with the lesser sigmoid cavity of the ulna, which was also enlarged, a socket which accommodated the head of the radius, which was strangely altered from its natural form.

This process, instead of presenting a circular outline with a concave summit, resembled in form the section of a sphere, its internal portion being, as it were, cut vertically, so as to present a surface nearly flat to the altered lesser sigmoid cavity of the ulna; the rest of the head of the bone, namely, all that could be felt through the muscles and integuments, was of an orbicular shape (as in the case of Horseman), and rolled in the excavation of the humerus already mentioned, during the motion of supination, which could be carried to a much greater extent than that of pronation. Both these motions were, however, very confined, for the lower extremity of the radius was as ill adapted to their complete execution as the superior. The lower extremity of the radius, which, in the natural state, presents a concavity where it articulates with the head of the ulna, was in contact with the latter by a nearly flat surface.

The superior extremity of the ulna was twisted in such a manner that the cartilaginous surface of the greater sigmoid cavity of the ulna was directed inwards. The neck of the radius could not be said to exist, the head springing almost directly from the shaft of the bone; the reverse of what is usually found in cases of congenital luxation of the head of the radius backwards, the neck of the bone being in these cases elongated to such a degree as to render the radius and ulna of equal length. The external and internal lateral ligaments existed, but ran in a direction nearly horizontal; the former passed outwards in an almost transverse course, to be attached to an exceedingly thin, broad, and imperfect coronary ligament.

The similarity which this case bears to that detailed by Mr. Adams will be rendered evident by the following extract:* "When we view the joint on its external aspect, the outer condyle is observed to be large, and placed as low down nearly as the olecranon process; above it a very conspicuous orbicular eminence is seen, which moves freely with the radius when a motion of rotation is communicated to the forearm; the inner condyle also descends very low down; the two condyles and the lower portion of the olecranon process (in the semi-flexed position of the joint, which it ordinarily remains in) are on the same plane; the lower extremity of the humerus is probably excavated to receive the greater sigmoid cavity of the ulna. The neck of the radius rotates on the ridge of the humerus, which descends to the outer condyle, above and somewhat behind the plane of the most anterior part of which the head of the bone is placed." Mr. Adams remarks, in conclusion, that this is the third case of lateral dislocation of the radius recorded, and the first of the congenital luxation of this kind as yet exhibited to the profession.

In the same year, that is, in 1840, Guérin recorded a case of congenital luxation of the head of the radius forwards and upwards,† but the record is so brief and so completely deficient in details as to be of little value. It is as follows: "*Luxation de la Tête du Radius en avant et en haut*, consistant dans le glissement de cet os au-devant de l'humérus, vers la fossette coronoïde de ce dernier. Cette luxation est nécessairement accompagnée de diastase des articulations radio-cubitales et de pseudo-luxation du carpe. Nous avons eu, l'année dernière, dans notre service, une jeune fille de sept ans offrant la même difformité des deux côtés."

Three varieties of congenital luxations of the head of the radius have now been established, viz: backwards and upwards; forwards, upwards, and outwards; and directly forwards.—*Dublin Quarterly Journ. Med. Sc.*, Aug. 1850.

33. *Dislocation of the Clavicle downwards, beneath the Acromion Process of the Scapula.*—R. G. W. Butcher, Esq., records, in the *Dublin Medical Press* (April 9, 1851), a case of this very rare accident, in a powerful muscular man, 50 years of age, a patient at Mercer's Hospital.

The mode in which the accident occurred was the following: The man was assisting a comrade in carrying a heavy press, the edge of which rested on his right shoulder. The load was too great for him, and he yielded under it, the weight changing its position farther in upon the clavicle; in falling, he thrust his hand out rigidly against the ground in the effort to save himself; this checked his fall, but from the resistance offered, the humerus, with the scapula fixed upon it by its powerful capsular muscles, was driven forcibly upwards, while the weight still acted on the clavicle, tearing through its ligaments and impelling it downwards: thus the two forces, tending in contrary directions, combined towards the production of this rare displacement. On removing the clothes from the upper part of the body, and viewing the patient in front, the most striking characteristic was the non-symmetrical distances between the external margin of the acromion processes on the right and left sides and the mesial line of the sternum; that on the right being, by measurement, an inch and a quarter less. The right shoulder also presented a very remarkable prominence, formed by the acromion, and rendered more in relief by the depression internally, occasioned by the clavicle passing beneath it; the lip of the latter could be felt a little to the outer edge of the external margin of the acromion, and lifting up the fibres of the deltoid; the superior edge of the articulating surface of the acromion was elevated, and might be discerned through the integuments; the fingers could be passed uninterruptedly from behind forwards along the spine of the scapula to its expansion into the acromion process. On pressure at its outer side, the projecting articulating end of the clavicle beneath it could be detected, as noticed above. The rotary motions of the joint were perfect, and might be performed by the surgeon without pain or suffering; but on the part of the patient there was complete inability to elevate the limb.

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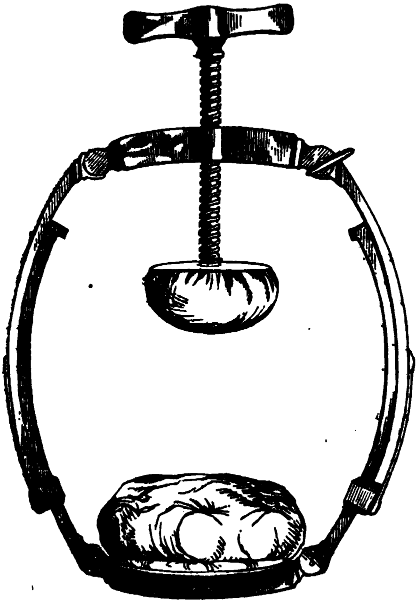
* Loc. cit.

† Gazette Médicale, 1840.

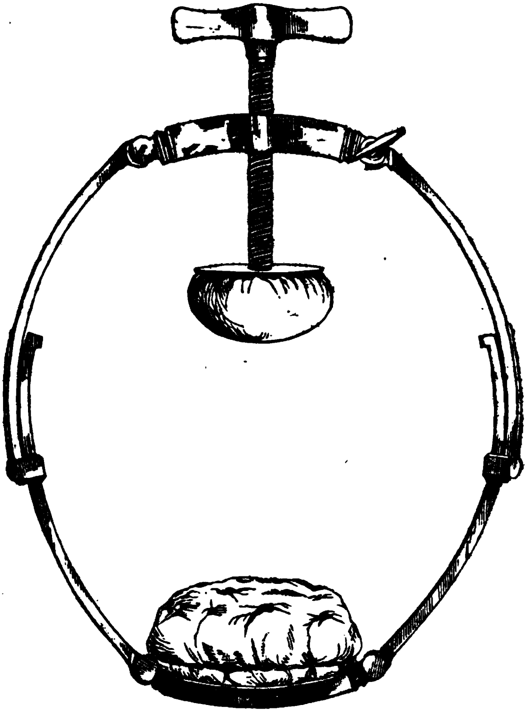
The deformity was removed when the shoulder was drawn forcibly back, or by the following manœuvre—first, drawing the arm a little backwards, keeping the extremity of the humerus close to the side with the right hand, and with the left grasping the upper part in the axilla, then, by pressing the shaft of the bone upwards and outwards, and at the same time carrying its inferior extremity forwards in a line with the anterior wall of the axilla, and continuing the force upwards, the acromion process was disengaged from off the clavicle, and by using a pad in the axilla, and retaining the arm in this position, excellent coaptation was effected. Mr. B. saw this patient three times after the accident, at intervals of a fortnight. After the pain and uneasiness about the joint had subsided, he became intolerant of restraint; and in five weeks used the limb with nearly as much freedom as the sound one, but with considerable loss of power.

A well-described case of this accident is given by Tournel in *Archives Générales de Médecine*, 1837; and another has recently been treated by Mr. Partridge, in King's College Hospital, London, and alluded to in the *Lancet* for January, 1850, in these terms: "The unusual circumstance of the case is that the acromial end of the clavicle is dislocated, not upon the acromion, as is commonly the case, but *below* that process, a fact which the fingers easily detect. There is no fracture, as might at first have been imagined, but this rare displacement has taken place, probably owing to the peculiar manner in which the horse or vehicle struck the patient's chest."

34. *Skey's Tourniquet.*—The tourniquet which I have substituted is composed of two semicircles, one of which fits into the other by running in a groove. Each half is fixed by a spring catch to the other, and may be enlarged or reduced at will to any size required for the thigh or upper arm. When required for application to the thigh, the circle, which is made to open, to admit of its application around the limb, is drawn out to its fullest size. In the centre of each semicircle is the pad for pressure and counter-pressure, the former being provided with the ordinary screw. The pads are made small, in order to include as little surface in the pressure as is compatible with the safe application of the instrument. When employed for a lesser limb, the arm for example, or



the thigh of a child, the circle is lessened to the required size by raising the lateral springs, and pressing the outer half or semicircle downwards upon the inner one, by which the large circle is converted into one of smaller size, the alteration being obtained by the introduction of two hinges in each half of the instrument.



I have found this tourniquet exceedingly efficient in its avoidance of the objections to that commonly used, and equally so in its power of arresting arterial hemorrhage. It is also especially applicable to cases requiring pressure for the treatment of aneurism, being less irksome and painful to the patient, when worn for a considerable time. The circulation in the main artery, which is the only one demanding compression, and for which purpose alone, indeed, the instrument is worn, is thoroughly arrested, while the collateral vessels are unaffected, and the current of blood in the venous system, except that of the chief vein, which is in close proximity with the artery, is altogether uninterrupted.—*Operative Surgery.*

35. *Injury of the Shoulder-Joint.*—Dr. Adams described to the Pathological Society of Dublin a case of dislocation of the head of the humerus forwards, which had been reduced, with the account of the *post-mortem* examination of the articulation, made thirty days after the occurrence of the luxation, the patient having died from the effects of another injury sustained fourteen days before her decease.

Eliza Dillon, aged 65, applied for surgical aid at the Richmond Hospital on October 27, 1849. She stated that she had fallen with much violence, and with her left arm extended from her side, in such a manner that the shock was chiefly sustained by the inner part of the elbow. The resident pupil, Mr. Johnston, recognized the usual characters of dislocation of the head of the humerus forwards; he noticed a remarkable flattening of the deltoid muscle, and felt the head of the bone in its new situation. His colleague, Mr. Roden, also recognised the injury, as did likewise Surgeon Bichaque. The head of the bone was replaced without difficulty, Mr. Johnston having adopted the plan of placing the knee in the axilla; the patient expressed herself relieved, and went home. In a few days she returned to the hospital, complaining of more pain in her shoulder-joint than patients usually do after the reduction of this dislocation, when she was subjected to the ordinary treatment for a sub-inflammatory condition of the articular structures.

On the sixteenth day after the shoulder had been luxated, this woman, being deaf and rather feeble, while heedlessly walking across the street, was knocked down by a passing vehicle, and received a compound fracture of the elbow-joint, of which, after having suffered from constitutional irritation and erysipelas for fourteen days, she died. The left shoulder-joint was examined after death: the deltoid muscle having been reflected, it was seen that the supra and infraspinatus muscle had torn off a large portion of the great tuberosity of the humerus, and that this portion had been partially reunited to the shaft by recent bony deposit. The anterior portion of the tuberosity, which lay next to the bicipital groove, still remained entire, and gave attachment to some of the tendinous fibres of the posterior articular muscles already mentioned.

Upon exposing the subscapular muscle, its upper margin, near to the coracoid process, seemed somewhat ecchymosed; and upon lifting up this muscle from the subscapular fossa, in the vicinity of the coronoid process, some well-formed pus was evacuated from the interior of the joint.

The capsular ligament was of a yellowish-white colour, and thickened, but no rupture could be discovered in it. On cutting into it, the whole of the synovial membrane was found to be in a high state of vascularity. The appearance which it presented might be compared to that of the conjunctiva when in a state of acute inflammation. Upon examining the glenoid cavity, it was discovered that a portion of its inner margin was torn off. This piece of bone was more than half an inch in length, and three lines broad. The cartilage of incrustation of the head of the humerus presented a porous appearance, as if punctated by small pin-points, and was very thin, as in some examples of diffuse inflammation.

With respect to the muscles in this dissection, it is to be remarked that they seemed to have suffered no injury. The supra-spinatus and neighbouring short articular muscles are those which in general have been found to have suffered most in cases of dislocation of the shoulder; although in this instance these muscles were not torn, their tendinous insertion had been partially broken off. The double lesion of the tuberosity of the humerus and inner margin of the glenoid cavity, if it had been to any greater extent, might have prevented the head of the humerus from being preserved in its socket after the reduction of the displacement, and thus have presented a repetition of a specimen preserved in our museum, and which Mr. Smith has already laid before this Society. In the case I have brought before the meeting, the bone, once replaced, remained in its socket; but in Mr. Smith's case, as the tuberosity was entirely torn off, all the posterior articular muscles, which should have retained the bone in its place when restored, had lost connection with the humerus; it was thus abandoned altogether to the force of the muscular folds of the axilla, which displaced the bone forwards and inwards, and held it in the abnormal position. Mr. Thompson, about the year 1792, first noticed that a dislocation of the humerus might be complicated with a fracture of the tuberosity; and Sir Philip Crampton published a similar case in the third volume of the First Series of the *Dublin Medical Journal.*

With respect to the capsule in Sir A. Cooper's and Sir Philip Crampton's cases, this ligament was extensively torn. In the case now adduced, examined thirty days after the injury, no rupture of the ligament could be observed. We may, I think, from this infer that, in this case, notwithstanding the obvious deformity observed, the degree of displacement must have been to the smallest amount possible, as the capsular ligament had not been torn; yet there can be no doubt but that the head of the dislocated bone lay beneath the root of the coracoid process. It is true the laceration of the insertion of the posterior articular muscles may have allowed the posterior portion of the capsular ligament to yield somewhat, and the tearing off of the inner or anterior margin of the glenoid cavity may have contributed to the same result.

Amongst the Hunterian manuscripts, were found, in the handwriting of John Hunter, the notes of a case of dislocation of a shoulder-joint, which resembled this in many particulars. A man was admitted into St. George's Hospital, London, with a dislocation of the humerus into the axilla, which was reduced, and about three weeks afterwards he died of fever. "I was anxious," says John Hunter, "to see the state of the parts in so recent a dislocation. On dissecting off the infra and supra-spinatus muscles, I found nothing uncommon respecting the capsular ligament; but when I dissected off the subscapularis I found the ligament in some degree injured, so as to have lost a good deal of its uniformity. It was of a dark bluish colour, in consequence of extravasation of blood into it, in part absorbed. I cut the capsule round nearly to the os humeri, where it was sound, so as to expose the inner surface of the ligament, and found that on the inner surface between the insertion of the tendon of the subscapularis muscle into it and its fixture to the edge of the glenoid cavity, it was injured, corresponding to the external surface, although I could not say fairly ruptured through. I also found that a circular part of the cartilage on the edge of the glenoid cavity, to which the ligament is attached, was torn away from the bone for about an inch of the circle, and which must have been pulled off when the head of the humerus pressed against the ligament with great force; but it kept its attachment by the remainder. The separation was such that it could not allow anything to pass between the bone and it. There was little or no extravasation of blood in the cavity of the joint; but, what was very remarkable and what I did not expect, I found a good deal of pus in the joint. If this is common in such cases, what becomes of it? Here," he adds, "was a case of *undoubted* dislocation, and yet the capsular ligament was *not torn* when the luxation was effected, although it must be supposed that the giving way of the cartilage at the edge of the glenoid cavity admitted the ligament to yield more than it otherwise would. Although the ligament was not torn so as to let the head of the bone escape through the rent part, yet the head of the bone was certainly out of the socket; and, from all the appearances and circumstances taken together, how it got there without doing more mischief I do not understand."—*Catalogue, Royal College of Surgeons, England*, vol. ii. p. 206.

In visiting the museum of the College of Surgeons of London, two years ago, I took particular notice of this preparation thus alluded to in the catalogue; and I at the same time felt astonished that these facts, recorded by John Hunter himself, had escaped, as far as I knew, the notice of those who had written on dislocation of the shoulder. This case recurred to my mind with much interest when I met with the specimen I now present to the Society. From such cases as these we should infer that we ought to examine carefully every case of luxation of the shoulder-joint, both before and after we have replaced it, with a view of ascertaining if the luxation is a simple one, and unaccompanied by fracture or lesion of bone besides the luxation; and, secondly, that we should watch any symptoms of arthritis in time, in order to meet them with appropriate treatment, and prevent any serious consequences. In the case I have presented we discovered an amount of inflammation of the shoulder-joint, which no one had anticipated to have existed at the time when the patient was carried off by the effects of another injury.—*Dublin Quarterly Journ. Med. Sc.*, Aug. 1850.

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36. *Fragilitas Ossium.*—Prof. R. W. Smith exhibited to the Pathological Society of Dublin the pelvis and thigh bones of a female who had suffered from this disease, and which had been forwarded to him by Dr. Campbell, of Lisburn. The following was the history of the case, as furnished by Dr. Campbell:—

Eliza Cosgrave, about forty-five years of age, a married woman, and mother of two children, the elder being nine years old and healthy, the younger having died when about three months old, began, shortly after the birth of her second child, to complain of pains in her limbs, and generally over her body, which she attributed to her residence in a damp house. She soon became so helpless as to be unable to get into or out of bed without assistance. On one occasion, while being helped into bed, her thigh was struck against the bed-post, and the femur broken just below the trochanter. She now obtained admission into a neighbouring hospital, where she remained many months, and was then discharged without having experienced any amendment of her condition. In this state she was removed into the Lisburn Union Workhouse, about two years ago. On examination, the injured limb appeared to be about three inches shorter than the other; there was no crepitus, although acute pain was experienced when the thigh was handled or moved. Her general health at this time did not appear much broken, and her appetite was good; but her pains, chiefly in the thigh, were so severe as to require the administration of an opiate every night. Several months having elapsed in this manner, one night whilst the nurse was turning her in bed, the other thigh was also broken near the trochanter, after which her pains for some weeks were mitigated to a certain extent. Diarrhœa at length set in, and resisted all treatment; her pains returned with greater violence than before, and she died after a few weeks of extreme suffering.

Upon examination after death, the fractures were found to have occurred about two inches below the great trochanters; they had both become consolidated, but with great deformity remaining, the fragments being, upon each side, at right angles with one another. The pelvis and thigh bones were so light as to float upon water, and so fragile that a slight pressure of the finger was sufficient to crush the osseous tissue. The compact structure of the femora was as thin as an egg-shell, and the medullary canals enlarged, here and there crossed by delicate osseous septa, and filled with a grumous semifluid substance, resembling a mixture of medullary matter and blood. Mr. Smith observed that the facility with which fractures united in such cases was remarkable, the union, as Mr. Stanley has noticed, occasionally taking place within the ordinary period. Mr. Tyrrell has recorded, in the "Reports of St. Thomas' Hospital," a case of fragilitas ossium, in which twenty-two fractures occurred, and observes that the injuries were repaired with greater rapidity than he had seen in other individuals, the union of the fracture of the femur being perfectly firm at the expiration of three or four weeks.

Mr. Smith, in conclusion, alluded to the extraordinary case of this disease recorded by Saillant* in which the lightness of the osseous system was such that the patient, an adult female, when placed in a warm bath, actually floated upon the surface of the water.—*Dublin Quarterly Journ. Med. Sc.*, Aug. 1850.

37. *Chloroform in Gonorrhœa.*—M. Venot recommends injections of chloroform as an *abortive* treatment of gonorrhœa, that is to say, of arresting it in the earliest period of its development; and thinks that it will replace the nitrate of silver, which is so frequently employed for this purpose. Pure chloroform is injected by a glass syringe, the perineum being pressed upon; the first effect is burning heat, then a sensation of cold follows. The injection does less good after the first two or three days of the gonorrhœa have passed; but, employed before that time, it almost invariably arrests it. Injected into the vagina, the results were less satisfactory.—*Med. Times*, April 19, 1851, from *L'Union Méd.*

OPHTHALMOLOGY.

38. *Observations on Collyria.*—[Dr. Arthur Jacob, one of the best informed, most judicious, and most reliable ophthalmic surgeons of our day, has published, in the *Dublin Medical Press* (May 7th, 1851), some very interesting remarks on collyria, which are well worthy the consideration of practitioners:—]

While discussing the treatment of each form of purulent ophthalmia, and the consequences thereof, I have had to notice repeatedly the various medicinal remedies applied directly to the conjunctiva, and to suggest inquiries respecting their *modus operandi.* I find, however, that it is desirable to offer some additional remarks on the subject by way of explanation. I have said that these remedies probably operate in three ways: as stimulants, astringents, and escharotics; and, I may add, as sedatives. This, I think, can scarcely be denied. That most, if not all of them, stimulate, cannot, I think, be doubted, and that some act as escharotics, is equally obvious; the astringent effect also seems undeniable, although perhaps the exact change of structure produced by astringents may not be so clearly established. It is assumed to be a diminution of the size of capillary vessels and a contraction of secreting parts, and apparently with reason. The sedative effect is not, however, so unquestionable, if we assume that the cessation of pain is evidence of it; for, notwithstanding an apparent belief to the contrary, remedies which uniformly allay pain are not in our hands. Still the existence of these four qualities in medicinal remedies, in a greater or less degree, is so far established that the practitioner may with safety make his selection in accordance with such a view. The use of an application simply stimulating in inflammation of the conjunctiva, or its consequences, may on consideration appear difficult of explanation; it seems like adding fuel to fire; yet it is doubtful whether the beneficial effect of a solution of nitrate of silver at this period is not from its stimulating properties: the impunity, if not advantage, often derived from weak medicinal solutions, indiscriminately used in routine practice, is also in favour of the conclusion that, even in the acute or active stage of inflammation, stimulation may sometimes be beneficial. I am not, however, advocating the practical application of such a theoretical view, I would only suggest an inquiry into its soundness; for the subject is one for consideration in other departments of the healing art as well as this. But whatever doubts may be entertained respecting the possibility of a beneficial operation by stimulants in the acute stage, there cannot, I think, be any respecting the advantage to be derived from them, sometimes at least, in that state of the conjunctiva which follows, and which has been called the chronic stage. After the tension of inflammatory action subsides, and when pain abates, and a mild purulent secretion is established, astringent applications unquestionably prove beneficial; and at a more advanced period, if these fail, or that symptoms demanding them ensue, stimulants also are found of advantage. The peculiar condition of the parts to which stimulating applications are suited does not, however, appear to be well understood; they are often used indiscriminately or empirically. It is, I think, when a sensation of scalding, with flow of tears and intolerance of light prevails, that they are useful; or when no other inconvenience remains except a certain tenderness or rawness of surface, depending perhaps on a want of epithelium. Of stimulating applications, the two most extensively employed are the *vinum opii* and the weak solutions of sulphate of zinc and copper, and such has been their success that they have become popular remedies, even beyond the limits of our profession.

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* Journal de Médecine, Chirurgie, et Pharmacie, 1782, t. lviii. p. 141.

I have already in a former paper expressed my opinion as to the value of the *vinum opii*, and quoted Mr. Ware's account of its benefits in his practice. It is now more than fifty years since his observations were published, and I know of no local application which has maintained its character amongst practical men so well. It often fails, it is true, especially when used in cases unsuited to it; but all men of experience agree that it is frequently a most useful application. Notwithstanding, however, the evidence in support of its beneficial operation, strange to say, an attempt has been just made to discard it from practice by omitting it from the Dublin Pharmacopœia, and substituting for it a simple vinous tincture without any of the aromatic stimulating ingredients. The reasons for this change I cannot discover. It was, I believe, first suggested by an oculist in London in extensive practice, although an ephemeral writer for the less scrupulous journals takes credit for its adoption. Whatever benefit attends its use seems to depend on its stimulating properties quite as much as its sedative, but probably it arises from the union of the two, although such a combination may appear unaccountable. At all events, the tincture substituted for it has no particular value, and must from the variable nature of the menstruum, and its liability to adulteration, be a very unequal preparation. Indeed, the beneficial effect of simple solutions of opium, its ingredients or products, in allaying painful sensibility of the conjunctiva and diminishing vascular turgescence, seems not to be so obvious as might be supposed from the sedative properties of the drug. I at one time made some experimental trials with them, using the strongest solutions in water and the common alcoholic tincture rendered less stimulating by the application of heat, but cannot say that the trial proved satisfactory. As I have stated in a former paper, the true *vinum opii* should be used in those cases only where scalding pain, profuse flow of tears, and intolerance of light prevail; and should now be prescribed under its old title of *tinctura thebaica*, or as the *vinum opii* of the London or Edinburgh Pharmacopœias.

Of the saline stimulants, the sulphate of zinc seems to have maintained its character above all others. It is the popular "eye-water" of this country, and could not, I think, have continued so for such a length of time unless it had been positively beneficial in a majority of cases. The sulphate of copper may, however, be of equal value, as well as the *lapis divinus*, a salt resulting from the mixture of alum, nitre, and sulphate of copper. Indeed, many other salts are probably equally efficient in proportion to their stimulating properties; and hence the popular use of vinegar and water, brandy, eau de Cologne, salt and water, and even urine, which is sometimes employed notwithstanding the objections its use must suggest. The sulphates of zinc and copper and the *lapis divinus* may be prescribed in water impregnated with camphor, and in the proportion of about two grains to the ounce. I generally order it in the common camphor mixture of the shops, adding a drachm of spirit and five drops of dilute sulphuric acid to an eight-ounce bottle. I have, however, to repeat, that it is in chronic cases, where the conjunctiva and edges of the lids are raw and tender, whether from preceding inflammation or not, that these stimulating applications prove beneficial. While any inflammatory action remains, or a tendency to relapse prevails, they are not desirable.

Respecting the use of astringent applications, in both the acute and chronic stage, I have already expressed my opinion. I have now only to suggest that the practitioner will endeavour to act upon some definite and exact principle as to their use. He has to settle what the precise change is which the agents called astringents produce; then whether such change is beneficial in conjunctival inflammation or its consequences; and if so, what astringent should be employed. The precise change, however, has not perhaps been exactly ascertained; whether chemical, physical, or vital. All that seems to be proved is that the surface to which an astringent is applied becomes shrivelled or corrugated, whether living or lifeless; but whether vessels become diminished in calibre, or secreting structures disabled from acting, or the epithelium coagulated by its operation, remains to be determined. Be the change, however, what it may, it seems to be proved by experience that astringents diminish the enlargement of vessels caused by inflammation, in fact remove the increased vascularity or redness, while they, at the same time, diminish or arrest the secretion of purulent matter, and perhaps benumb the sensitive *villi* or *papillæ*. Of the medicinal agents used for this purpose, tannin from the organic, and alum from the inorganic sources, seem most entitled to confidence, considering their action on lifeless structures: hence the occasional use of infusions of galls, oak-bark, and other vegetable materials, and of solutions of tannin itself. I cannot, however, say that I have found tannin beneficial in the chronic vascularity of conjunctival inflammation. Its use seems to be revived and announced as a novelty by some Belgian practitioner, but I have not repeated the trials I formerly made of it. A saturated solution of alum (sulphas aluminæ et potassæ) may be dropped with safety between the eyelids once or twice in the twenty-four hours, and a weaker solution, five grains to the ounce of water, may be more freely used as a *collyrium*. It has, probably, more astringent with less stimulating properties than any other salt, but the sulphates of zinc and copper are also astringent, although more irritating. Acetate of lead seems also to be powerfully astringent, with little stimulating qualities, and even perhaps with some sedative operation. Nitrate of silver also, as I have already stated, is a valuable astringent in the proportion of ten grains to the ounce of water. The practitioner may, I believe, with safety, give most of the metallic salts a trial, if so inclined, and may add to our information by recording the results of such experiments. At one time I made many experiments with some of them, but the result was a greater reliance upon alum, acetate or diacetate of lead, and nitrate of silver.

Of the value of what are called sedative applications in conjunctival inflammation and its consequences, no very accurate estimate seems to have been formed, notwithstanding their frequent use. Warm stupes and tepid lotions containing narcotic materials are considered beneficial in the acute stage; but whether the apparent advantage attending their employment depends more on the warm moisture than the medicinal influence, appears doubtful. I have from time to time used opium, hops, hemlock, hyoscyamus, belladonna, and tobacco, in this way, but still remain undecided as to their medicinal value, except in cases assuming a neuralgic character, where they appear to be of positive benefit when used of proper strength. The value of sedative applications directly to the conjunctiva seems also undecided, although generally assumed to be unquestionable. Opium, and the narcotic products derived from it, after a fair trial, seem beneficial in particular cases only. They do not uniformly allay the scalding pain which accompanies the increased vascularity consequent to inflammation, notwithstanding the notion very generally entertained that they must necessarily do so. I have just alluded to the use of the *vinum opii*, and am convinced that its admitted beneficial operation depends upon the combination of sedative and stimulant properties in the preparation; neither strong solutions in water, nor simple tinctures in wine or alcohol, have the same effect. I have tried tinctures of hop, hemlock, and tobacco, in cases where the *vinum opii* generally succeeds, but I cannot say that I have found them of much value, although they may be used with safety. The acetate and diacetate of lead are generally considered to possess sedative properties, but I cannot discover on what grounds. They are, I believe, powerful astringents, with moderate stimulating properties, and may be used in any strength, not being escharotic, however applied. The common Goulard's extract (liquor plumbi diacetatis) and the saturated solution of the acetate of lead may be dropped into the eye without fear of any ill consequence, and, in the chronic vascularity following catarrhal ophthalmia, with great benefit. I have been in the habit of using a *collyrium* made by mixing the diacetate of lead with the *acetum opii* in water; and latterly have been trying a strong preparation of this nature, made by mixing equal parts of Goulard's extract and acetum opii. There is of course decomposition in such a mixture, and a copious precipitate is thrown down; but the fluid obtained by filtering or rest is evidently an efficient one, and not irritating. I drop it freely between the eyelids, when the *villi papillæ*, or glands of the conjunctiva lining the lids, are turgid or enlarged.

Of the use of applications positively escharotic, in both the acute and chronic stages of purulent ophthalmia, I have already expressed some opinion; and have now only to suggest a consideration of the nature of an escharotic so administered. It is, I conclude, assumed to be an agent operating as a chemical solvent of the structure to which it is applied, and being so, must be very cautiously used. I am not here alluding to its use in progressive ulceration of the conjunctiva, or to granular lids, but to its use as a dressing to the entire conjunctival surface; and as such, its true effect should be well understood. Here, however, a question arises as to the fact of escharotics being so used at all, and it must be admitted that, unless strong solutions of nitrate of silver are of this nature, few other solutions used, if any, operate in this way. Saturated solutions of alum or acetate of lead are certainly not chemically escharotic; neither perhaps are saturated solutions of sulphate of zinc or sulphate of copper, but strong acids, alkaline solutions, and lime suspended in water, are; although not medicinally used. I have said elsewhere that a solution of nitrate of silver containing thirty grains or less in the ounce of water, is escharotic, because, if repeatedly brushed over the surface of an everted eyelid, a gray pellicle is produced; yet such a solution may be dropped into the eye without burning the conjunctiva, and perhaps even a stronger solution might be so applied without destruction of surface. The ointment recommended by Mr. Guthrie, being ten grains of nitrate of silver triturated with a drachm of lard, is also probably escharotic; although more or less of the nitrate must be decomposed by the addition of fifteen drops of diacetate of lead added.

I have here, as well as in other places, been endeavouring to direct the attention of practitioners to a more rational practice in the use of local applications to the conjunctiva; because, notwithstanding the length of time they have been used, they are generally administered empirically, and without a proper consideration of their exact nature. The subject is one which, perhaps, might be more effectually handled in a distinct essay than in a practical treatise, because it is one of importance in relation to other departments of surgery; but if it leads practitioners to reconsider their opinions respecting the comparative value of *collyria*, the inquiry cannot fail to be beneficial. While alluding to the subject, it may, however, be useful to remind them that these direct local applications may be often not only unnecessary, but absolutely mischievous. I have no doubt that recovery is often interrupted by the use of them, and that many of the worst cases of what is called chronic ophthalmia are reduced to that condition by premature and injudicious irritation in this way. It is true that, in general practice, the prejudices of the people do not permit a fair trial of less active interference, but in hospital and dispensary practice, and especially in the military department, an opportunity of doing so is afforded. Of the method of applying *collyria*, lotions, or solutions to the conjunctiva, it is necessary to offer a few observations, the importance of a proper administration of remedies in this way being generally overlooked. A drop of fluid placed on the surface of the eye, between the two margins of the eyelids, must have but a very limited operation, narrowed as the exposed surface is by the contraction of the orbicular muscle, and confined as the fluid is from spreading between the lids by the accurate fitting of the palpebral cartilage to the eyeball. To secure a full exposure of the whole conjunctiva of both the eye and the lids to the contact of the fluid, it should be introduced beneath the upper lid at the outer angle by separating the two surfaces and introducing a large drop from a full-sized camel's hair pencil between them. By laying the thumb or finger on the skin between the lid and brow, and pushing it up over the margin of the orbit, a space is made between the lid and ball, into which the fluid should be dropped, and from this it will spread over the whole surface. If a more complete saturation of the upper lid is required, it must be everted and repeatedly brushed over with the solution.

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39. *Fungoid Tumour of Orbit—Extirpation—Death.*—Mr. J. B. **Fife** presented to the New Castle and Gateshead Pathological Society (Nov. 9th, 1850) a fungoid tumour of the orbit which he had removed, a few months previously, from a child æt. 4, who was first noticed to be blind a year before the removal of the disease. At this time a bright metallic spot was seen at the depth of the eyeball. Little disturbance of the health took place for several months after this, and the eyeball remained in much the same condition until two months previous to the operation, when it began sensibly to project from the orbit, and to be inflamed and painful. The eyeball from this time was rapidly pushed out of the orbit by a lobulated, soft, fungoid tumour, and in two months projected beyond the edges of the orbit with the eyeball on its anterior surface. The child suffered great pain, and as the friends were wishful to have an operation performed, it was removed in the usual way: the hemorrhage, which was profuse, was restrained by plugging the orbit firmly. The wounds of the eyelids and of the orbit healed kindly, and the patient progressed favourably until three months after the operation, when, without any external signs of the return of the disease, the child was seized with convulsions, and died suddenly—no doubt from an extension of the disease in the cranium. The tumour was of a soft, spongy, fungoid consistence, devoid of any appearance of fungus hæmatodes, and consisted almost entirely of small granular and nucleated cells, contained in the meshes of a soft, cellular, fibrous-like stroma, which, on maceration, readily allowed the cells to escape, and the tumour to collapse to a very small size. The cells were round or oval, about half the size of pus-globules, all of them preserving a pretty nearly equal size, and possessed of one or more

nuclei, and numberless minute shining granules, both in the cells, and floating in the fluid containing them. The fibrous stroma consisted of fibres, many of them containing nuclei, more or less resembling caudate cells. The tumour evidently sprang from the optic nerve, and appeared to have passed along it into the optic foramen. The interior of the eyeball was filled with a thick, white, paste-like fluid, which consisted of cells similar in all respects to those compassing the tumour, presenting, however, no trace of fibres, and occupying the position of the humours which were altogether absorbed.—*London Med. Gaz.*, Feb. 1851.

40. *Melanotic Tumour of the Orbit removed.*—Mr. J. B. Fife exhibited to the New Castle and Gateshead Pathological Society a melanotic tumour removed from a man aged 51. Loss of vision, and a slight projection of the eyeball, were the first symptoms remarked by him twenty-five years ago, when he became a patient of Sir J. Fife, who cured him by the use of iodine. The eyeball since that time had been very prominent at two other periods, but was each time replaced by the same remedies. Two years ago it again began to project from the orbit, and notwithstanding all efforts to reduce the tumour that was evidently forcing it forwards, the eye continued to advance, and at the time of the operation was projected beyond the eyelids by an elastic fungoid-like tumour (covered by the thickened and congested conjunctiva), which encircled the eyeball in such a manner that the cornea was alone visible. Until within a few months preceding the operation, no pain accompanied the progress of the disease.

The whole of the contents of the orbit were removed without difficulty. The hemorrhage was very profuse, but quickly ceased on the plugging of the cavity. The tumour entirely filled the orbit, and on being cut open was found as black as coal; it was invested with a covering of cellular tissue, which also ran into the interior of it, separating the whole into lobules: in structure it was soft, and consisted of a cellular tissue, infiltrated with the pigment matter, which was readily washed out of the tissue when incised. The pigment matter under the microscope exhibited innumerable dark-brown organic granules, existing singly, or aggregated together in compound granular cells of great variety of size and form, together with numerous oil-globules, and round and oval colourless cells, about the size of pus-globules, with faint outlines, containing in their interior small shining granules, and occasionally other smaller cells of similar appearance to themselves; also cells of varying size, with thick, dark-brown walls, only very slightly transparent, and containing in the cell-walls numerous dark granules, and occasionally nuclei. These latter cells appeared as if they were the colourless cells transformed by growth and the acquisition of pigment into the peculiar cell of melanosis. The operation was performed three months ago, and the patient reports himself as being quite well, the wounds having healed.—*Ibid.*

[A sufficient time has not elapsed since the operation to pronounce it a successful one.—I. H.]

MIDWIFERY.

41. *On Compression of the Skull of the Infant during Birth, and its Effects.*—Dr. Ogier Ward read a paper on this subject to the Royal Medical and Chirurgical Society (March 11th, 1851). The immediate object of the author of the paper was to draw attention to the compression of the bones of the skull during parturition, and the influence which this exerted on the after condition of the child, whether physical or mental. The subject had been, he considered, much neglected, and he had therefore been induced to bring it before the Society. After stating that he distinguished the deformity produced by its situation, and the bone or bones more immediately implicated in the abnormal condition, he proceeded to enumerate the immediate and remote consequences of the pressure. These consisted of symptoms of imperfect cerebral develop-

ment, and its consequences, together with a train of dyspeptic symptoms, of which flatulence was the most prominent. He also considered that epileptic convulsions and paralysis might result from the same cause. After referring to the influence which Foville attributed to the strange head-dress of the children in Normandy in the production of insanity, the author threw out the hint that compression exerted on the head during parturition might have a similar effect. With respect to the treatment of the effects of compression, the author recommends that when the child is born asphyxiated, free inspiration should be established as quickly as possible; and to effect this, he advises that the child should be made to cry by birching it with a single twig, &c.; he states the bones of the head may be seen to expand immediately that free respiration is established. He considered that manipulation of the bones of the head was of no service in these cases, unless the whole head was affected. The paralysis and other results which he had enumerated were to be treated in the usual manner, regard always being had to the immediate and peculiar cause of the affection. In the discussion which ensued, the questions mooted had reference chiefly to one point in the paper. Did the pressure exerted on the head by parturition really have such effects as those described? On one side it was contended that such pressure was injurious in the manner described by the author; and cases were related in point to show that such was the fact; in these cases, convulsions and other disorders of the nervous system were present. The experience of Foville also was alluded to with regard to the compression which was exerted by the Norman cap on the heads of children. Two fingers could be put into the indentation so produced. Foville had regarded this as a frequent cause of mania. It was asked whether the pressure on the head of the Carib had any influence in the production of mental disease? On the opposite side, however, cases were referred to, in which deformities existed similar to those described in the paper, but the children so affected had no sign or symptoms of disease about them, and the distorted parts became quite restored without interference. In support of the opposition to Dr. Ward's conclusion, the condition of the child's head after delivery was referred to. Frequently after difficult or protracted labours, the heads were of all shapes, and yet how quickly, by the efforts of Nature, did the heads assume their proper form! Even large extravasations of blood were removed in an incredibly short space of time.—*Lancet*, March 15th, 1851.

42. *Fatal Case of Inversion of the Uterus, with Attached Placenta, occurring under the management of a midwife immediately after delivery.*—Dr. E. Smith related to the Medical Society of London, May 17th, 1851, a case of this accident. "The subject of it was thirty-five years of age, of somewhat large build, and of full habit, and was apparently more sensitive than females are in general. She enjoyed a fair share of health, but was always disposed to complain, and her scrofulous temperament evinced the lack of a robust system. She was ill fitted to repel the influence of exhausting agents. She was delivered of her second child at eleven P.M. on May 5, after a labour of less than the average suffering, and of only five hours' duration. I was called to see her at a quarter past eleven P.M., and found a tumour of about ten inches in diameter, projecting from the external parts. The placenta was chiefly attached to the anterior part, but prolongations of it surrounded the whole tumour in such a manner, that a central cup-shaped concavity existed, of two inches in diameter, and three-quarters of an inch in perpendicular depth. On examination, this tumour proved to be the inverted uterus, to which the placenta was still perfectly adherent. The funis was broken into two parts; that which was attached to the placenta being about eight inches in length, and the portion which was separated being about twelve inches in length. There did not appear to be more hemorrhage than is usually observed when the placenta is detached and expelled in the ordinary mode. She was quite conscious, and fully alive to all that was transpiring, and was not apparently aware of the existence of imminent danger. Yet her pulse could only be felt at intervals, and then only during two or three beats, which were not remarkably frequent. I instantly sent messengers to request the assistance of two neighbouring practitioners, and in the mean time endeavoured to return the uterus, with the placenta still attached,

within the parts, as a preparatory step to the reduction of the inversion. The effort was ineffectual, and the anterior surface of the placenta becoming ruptured at one point, a considerable gush of blood followed. My medical friends arrived in over five minutes after I had first seen the case, and we determined to peel off the placenta first, and then return the uterus. The first was effected by Mr. Lucas, without any further loss of blood, and the latter was also accomplished without much difficulty. The pulse was still almost imperceptible, but the mind was collected and calm. No noises were complained of, nor were there the slightest indications of faintness or spasm. Pure brandy was administered freely, in about half-ounce doses, so frequently, that half a pint was exhibited in three hours, yet no improvement of any but the most temporary character was effected in the circulation. A drowsiness began to steal over the senses in about an hour after the womb was replaced, which the patient attributed, erroneously perhaps, to the effects of the brandy; but from this she could be aroused with more and more effort as the progress of the case advanced. At about one P.M., a sharper state of the countenance became evident, and this increased so much, yet without any complaint whatever, that at from two to three P.M. she had lost her own distinctive features. I frequently introduced my fingers within the patulous os uteri, and placed my hand upon the abdomen, and observed that the uterus remained tolerably contracted, and that at no time was there the slightest hemorrhage. Finding that no benefit whatever had resulted from the administration of the brandy, I again requested the advice of Mr. Lucas at half-past two A.M., when it was determined to move the patient very carefully, but to the extent of relieving the discomfort of the position, and to administer ether. This was done, and the pulse seemed to gain in firmness and steadiness for about a quarter of an hour; but the dullness of the senses still continued. At the end of that period she suddenly appeared to become more exhausted, yet remaining somewhat conscious, and whilst endeavouring to swallow a small quantity of brandy, deglutition failed, and she sank gradually in a few minutes.

The post-mortem examination showed a healthy condition of all the organs of the chest and abdomen, but all were drained of blood. The heart and great vessels were empty. The uterus was properly replaced and empty, having no clots of blood whatever, but some slight remains of the placenta; the cavity was about five inches in the transverse, and eight inches in the longitudinal diameter; the tissue of the uterus was loose and flabby, and the walls at the fundus were fully half an inch in thickness. At the inquest I gave as my opinion of the cause of death, that the patient had died from the shock upon the nervous system, induced partly by the loss of blood and partly by the violent inversion of the uterus.

The points of interest in this case appear to me to be the following: 1st. A confirmation of the ordinary position of the placenta. 2dly. The fact that a bloodless condition of the whole system was induced by an amount of hemorrhage which did not appear to any person present to be considerable, and without any other symptom than pulselessness. The drowsiness which was eventually induced might at least, in some degree, be attributed to the alcohol. At any rate, this and the sharpened features more readily pointed to the nervous than to the circulating systems. 3dly. Considering that the symptoms were rather those indicating a shock than exhaustion from hemorrhage, would it have been prudent to have so far suspended the administration of the brandy as to administer ammonia, ether, or other nervous stimulants? 4thly. Dr. Denman and Dr. Burns advise that the uterus, with the attached placenta, be returned. Dr. Merriman also gives the like counsel, but he mentions an instance in which he first detached the placenta, and the patient did well. It is highly important that some definite rule should be laid down by the profession; for if it be judged best to detach the placenta, it will be injurious to lose time in endeavouring to return it; if it be deemed proper to return the mass, it cannot be right to run the risk of alarming hemorrhage by first detaching the placenta. 5thly. What direct evidence can be adduced to show the guilty interference on the part of the midwife? Cases are recorded of inversion of the uterus having occurred from the mere dead weight of the attached placenta; also from distension of the alimentary canal, or of some sudden action of the abdominal muscles, and therefore blame does not, of necessity, attach to the attendant. It is true that, until the placenta is detached, the hand ought not to be for a long time apart from the womb, and in cases where inversion has thus occurred, it has not been so complete as in this case; but yet the admission of the possibility of such an occurrence renders it imperative that direct evidence of a guilty interference or neglect should be established.

The evidences in the case are—1. The admission of the midwife that she attempted to remove the placenta within a quarter of an hour after delivery. 2. A further admission that she did use some force, but that it was to a very slight extent. 3. The rupture of the funis. 4. The persistence of the uterine contraction after the uterus had been returned, and when that organ was almost bloodless and the system exhausted, is *primâ facie* evidence that the inversion had not resulted from the absence of contraction. Still the link was wanting to show that the midwife had used improper force, and thus she escaped punishment. 5. Was transfusion indicated in this case?—*Lancet*, May 24, 1851.

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43. *On Diarrhœa as a hitherto unnoticed symptom of Menstruation, and on the use of Purgatives at the different Epochs of the Menstrual Function.*—Dr. Tilt, in a paper read before the Medical Society of London (Feb. 22, 1851), premised that, not having found any description of catamenial diarrhœa as a symptom of menstruation, in the classic work of Friend and Brierre de Boismont, he concluded that it was not generally known to the profession, except as a morbid complication of the function. He then proceeded to inquire into the nature of that catamenial diarrhœa, whether it occurs—

1. At the prodroma of menstruation.
2. During its regular establishment.
3. At its cessation.

1. As a symptom of the prodroma of menstruation, diarrhœa scarcely ever occurs. It was noticed but once in 161 cases.

2. As a symptom of regularly-established menstruation, it occurred in 88 instances out of the 161 who were carefully interrogated relative to this point. It did not occur in 72 cases; and in those in which it did occur, it preceded the menstrual flow in 45 cases, it accompanied it in 31, it both preceded and accompanied it in 10, and in two instances it neither preceded nor accompanied, but habitually followed, the menstrual flow for two days; and where there was precursory diarrhœa, the bowels were afterwards in general *costive* until the cessation of the catamenia.

3. As a symptom of menstruation at its cessation, diarrhœa occurs much less frequently than is generally supposed, for it was only found in eight per cent. of such cases. With respect to the nature of the diarrhœa, it is generally unattended by pain, but sometimes nausea and slight colics precede it for two or three days. In one patient, Dr. Tilt found these symptoms continue for eight days previous to the appearance of diarrhœa. When it occurs at the change of life, it generally appears at irregular intervals, though it may adopt the regularity of the menstrual function. As a general rule, however, Dr. Tilt is of opinion that, when diarrhœa has habitually accompanied menstruation, there is, at the change of life, a gradual diminution of both discharges, the cessation of one marking the termination of the other.

From the preceding facts, Dr. Tilt deduced the physiological inference, that, for the performance of the function of menstruation, the ovaries not only determine the menstrual secretion from the womb, but also often call into consentaneous action most of the organs, which, being subsidiary to nutrition, are animated by the same ganglionic nervous system, and particularly the intestines, with which they are placed in such close juxtaposition. He then laid down the rules which he considered to be those which should be adopted in the administration of purgatives:—

1. During the prodroma.
2. During the regular establishment.
3. At the cessation of menstruation.

1. Use of purgatives during the prodroma of this function.

Dr. Tilt is of opinion that purgatives should not be given at this period, because they were neither sanctioned by experience nor confirmed by his inquiries.

2. Use of purgatives during fully-established menstruation.

As Nature herself has often prefaced the menstrual crisis by a premonitory diarrhœa, so experience teaches that purgatives may be advantageously employed when defective menstruation does not depend on any serious organic lesion. The great point, Dr. Tilt said, in the administration of purgatives, is not to interfere with the menstrual type; for, if this may be done with impunity in a very small class of women, it cannot be so in the majority. Brisk purgatives, given a few days before the symptoms which precede menstruation, often anticipate it by a few days, and thus vex Nature in one of her most constant laws, often producing permanent disorders of that function. An inquiry into how many days before the menstrual flow the premonitory diarrhœa used to appear, or, if the patient has not that symptom, the date of appearance of other menstrual symptoms, will be a sure guide as to the fit time for giving purgatives.

Dr. Tilt next touched on the value of the purgatives in amenorrhœa and in chlorosis, relating that a friend of Morgagni never gave anything, in such cases, but small doses of aloes; and that Dr. Hamilton, of Edinburgh, depended exclusively on purgatives for the cure of chlorosis. Dr. Tilt, however, thought it best not to confide in purgatives alone, but to let them form the initial part of the treatment, as in Nature diarrhœa often forms the initial part of menstruation; and therefore to begin with a decided shock on the system of nutrition by an emeto-cathartic, followed by steel and bitters; but if he finds that the appetite does not improve, and that the bowels remain sluggish, he puts aside the steel and bitters, and seeks to break in on a perverse concentration of forces by giving another emeto-cathartic.

At the period so appositely called by women the dodging time, it is injudicious to give purgatives just before the menstrual epoch; for, says Dr. Tilt, they might increase the flow Nature seeks to diminish; therefore it is more prudent to prescribe the frequent use of the milder opening medicines, so as to diminish, by degrees, the plethora of the abdominal viscera.

3. Use of purgatives after the cessation of menstruation.

At this period of life purgatives must be given habitually, for the intention is, not to re-establish periodical discharge, but to diminish plethora, and the necessity for that plethora seeking for any other less manageable seat. As regards what purgative should be given, it is as well, in general, to prescribe the medicine best tolerated by the patient. The soap-and-aloes pill of the Pharmacopœia, ordering five or ten grains to be taken at dinner, Dr. Tilt frequently recommends. He has never seen hemorrhoidal affections *caused* by this frequent use of aloes, but often *relieved* by it; and his experience on this point he has found confirmed by that of Avicenna, Stahl, Giacomini, and Cullen. The flour of sulphur alone, or else to each drachm of it a drachm of sesquicarbonate or biborate of soda, and sometimes from five to ten grains of ipecacuanha, may be given in quantities of from one to three scruples of these powders, to be taken once a day, in milk, so as to act mildly on the bowels, which is one of the chief things required at the cessation of menstruation.

Several fellows took part in the discussion on Dr. Tilt's paper. Reference was made to a paper by Dr. Butler Lane, to show that the views advanced by Dr. Tilt had been somewhat anticipated by that gentleman. However, it was admitted that he had rendered a service to science, by the facts which he had advanced in his paper. The debate referred chiefly to two points—the physiological and the pathological ones, to which the paper referred. Various opinions were expressed as to the mode in which diarrhœa might be supposed to act in retarding, interfering with, or promoting, the menstrual discharge. Some difference of opinion existed as to the indications presented for treatment. In his reply, Dr. Tilt stated that he had not seen the essay of Dr. Butler Lane.—*Lancet*, March 15th, 1851.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

44. *Case of Rapid Delivery.* By B. W. M'Cready, M. D., Professor of Materia Medica and Pharmacy in the New York College of Pharmacy. (Communicated to Dr. T. R. Beck.)—I was called in haste about three o'clock in the morning of May 6th, to see Mrs. M'E. I found her supported by a friend, in a sitting posture, over a pot de chambre. She had been taken in labour about an hour previously, had risen to evacuate the bowels, and while sitting on the vessel the child had been born. Believing it to be still connected with her body, she had been afraid to rise, and had remained in her uneasy position till my arrival. Finding that the placenta had already come away, I immediately lifted the patient into the bed, and, removing the child, the whole of the head and part of the body of which were immersed in urine, after dividing the cord, and drying the child's face, I commenced efforts for its resuscitation. In a few minutes I was rewarded by observing a faint effort at respiration, and in half an hour the child cried vigorously.

According to the account of the mother, the child was born immediately after the husband had left the house to request my attendance. As he had to walk nearly a quarter of a mile to my residence, and to return the same distance, we may safely conclude, including the time I occupied in dressing, that he was absent at least fifteen minutes. During all this time the child's head had been under water.

It is to be noticed too that, though it was the patient's third child, she was quite unaware that the placenta had come away, and that neither she nor either of the attendants had presence of mind enough to remove the child from its dangerous position.

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45. *Death from the External Application of Arsenic.* By B. W. M'Cready, M. D., Prof. of Mat. Med. &c. in the New York College of Pharmacy. (Communicated to Dr. T. R. Beck.)—In the latter part of August, 1844, I was called to the family of a poor woman, residing in Walker St. I found two children, about five and seven years of age, with their faces swollen and œdematous, particularly about the eyes, and the skin red and shining. The scalp was covered with a copious eruption of porrigo favosa, and careful examination discovered upon it, adhering in points to the pustules and about the roots of the hair, some reddish ointment. On questioning the woman, she stated that, on the day previous, she had applied at the dispensary to have her children treated for the eruption, and had been furnished with the ointment in question (ung. hydrarg. oxyd. rubr.). This had been rubbed thoroughly into the affected parts, and had been followed by the swelling and redness of the face. The next morning the children appeared much better. She now informed me that, following the advice of an old woman, she had obtained sixpence worth of arsenic (arsen. alb.), had mixed it with a gill of gin, and rubbed it well into the children's heads just previous to the application of the ointment. At the same time a younger child (about two years of age), likewise affected with P. favosa, was shown me, when a similar course had at the same time been pursued. This child's countenance was pale, and there was no sign of inflammation about the scalp, but it was suffering from diarrhœa and tenesmus, with great weakness of the lower extremities. The same night it died, its lower extremities having first become completely paralyzed. At the coroner's inquest, the old woman, who had advised the treatment, testified that she had repeatedly used the same means in scald head, and always without bad consequences, and with the cure of the eruption. The mother stated that she had on one previous occasion applied the arsenic, and though the application was followed by some swelling, this soon subsided, and the head seemed much better. The quantity of arsenic obtained must have been about half an ounce, and this, having been previously added to the gin, and the bottle well shaken, had been rubbed freely on the scalps of the three children. It will be noticed that, in the child that died, the application was followed by no marks of local inflammation. No post-mortem examination was made. The other two children speedily recovered.

46. *Medical Evidence, in favour and at the request of the Prisoner.*—(See *Beale's Med. Jurisprudence*, edition of 1850, vol. ii. p. 911.)

Central Criminal Court, London, Aug. 22, 1848. *Regina* v. *Spry & Dore.*

The coroner's jury having returned a verdict of wilful murder against the prisoners, Clarkson applied on their behalf, previous to the trial, that Dr. Taylor might be permitted to inspect the stomach of the deceased and its contents, which were at present in the keeping of a police inspector. He considered it absolutely essential to the interests of the accused that this should be done, in order that they might be prepared at the trial with evidence, which nothing but a minute examination could furnish.

The Recorder. This is a very unusual application, and one that I am not quite sure the court has jurisdiction to entertain; but as it appears to be made in furtherance of the interests of justice, I think I may take upon myself to make the order. The examination, however, should take place in the presence of the officer who has custody of the stomach, as well as in that of the medical gentleman who examined it on the part of the prosecution. The expense must be borne by the prisoners, and I think the coroner should have notice of the time and place of the examination. I have the less difficulty in granting the application, because the judge would no doubt, at the trial, stop the case until such examination had been made.—*Cox's Reports of Cases in Criminal Law*, vol. iii. p. 221. T. R. B.

47. *Wounding.*—The following are cases apparently parallel, yet not without anatomical reasons to justify the legal decisions:—

Central Criminal Court, January, 1848. Before Mr. Justice Patteson. *Reg.* v. *Jones.*—The prisoner was indicted for wounding with intent to do grievous bodily harm. Bedkin, for the prosecution, stated the nature of the wound to be as follows: The prisoner had come behind the prosecutrix, and given her a violent kick in the private parts, and that had been followed by an occasional discharge of blood, mingled with urine; but the surgeon could not undertake to say from what precise vessels the blood originally flowed.

Patteson, J. Then I do not think the more serious charge in this indictment sustainable. There may have been no lesion of any of the vessels at all. Blood may be discharged from those parts simply from natural causes.

Ibid. Feb. 3, 1849. Before Mr. Justice Creswell. *Reg.* v. *Waltham.*—The prisoner was indicted for wounding the prosecutor, with intent to do him grievous bodily harm. It appeared from the evidence that the prosecutor, who was a policeman, while endeavouring to separate the prisoner and a man with whom he was fighting, received from the former a violent kick in his private parts. From the testimony of the surgeon, it appeared that the external skin was unbroken, but that the lining membrane of the urethra was ruptured, which caused a small flow of blood mingled with urine, for two days. That membrane is precisely the same in character as that which lines the cheek and the external and internal skin of the lip.

Perry (for the prisoner) objected that this was not a wounding within the statute, and cited *Regina* v. *Jones;* that case was very similar to the present; there is no external wound.

Creswell, J. If the cases were similar, I should abide by the ruling of Mr. Justice Patteson, but there is a great difference between them. I think this is a wounding within the statute.—*Cox's Criminal Law Cases*, vol. iii. pp. 441, 442. T. R. B.

48. *Rape.*—The *Queen* v. *Ryan.* The prisoner was indicted for rape. The prosecutrix was an idiot, and when asked questions in the witnesses' box, was evidently unconscious of their import, and not in a condition to understand right from wrong. Platt, B. interrogated her father as to her general habits, whether they were those of decency and propriety, and an answer in the affirmative was returned.

Platt, B. in summing up: The question is, did the connection take place with her consent? It seems that she was in a condition incapable of judging, and it is important to consider whether a young person, in such a state of incapacity, was likely to consent to the embraces of this man; because if her habits, however irresponsible she might be, were loose and indecent, there might be a probability of such consent being given, and a jury might not think it safe to conclude that she was not a willing party. But here the presumption is that the young woman would not have consented, and if she was in a state of unconsciousness at the time the connection took place, whether it was produced by any act of the prisoner, or by any act of her own, any one having connection would be guilty of a rape. If you believe that she was in a state of unconsciousness, the law assumes that the connection took place without her consent, and the prisoner is guilty of the crime charged. The prisoner was convicted.—*Cox's Criminal Law Cases*, vol. ii. p. 115. T. R. B.

49. *Rape.*—*Rex* v. *Camplin.* The details of this case will be found in *Beck's Medical Jurisprudence*, last edition, vol. i. p. 183. I find the following note in the first volume of *Denison's Crown Cases Reversed*, which seems important to the full consideration of this trial:—

"Mr. Baron Parke has kindly furnished the editor with the following note of the reasons for the opinion of the judges in the case of *Rex* v. *Camplin*:—

"Of the judges who were in favour of the conviction, several thought that the crime of rape is committed by violating a woman when she is in a state of insensibility, and has no power over her will, whether such state is caused by the man or not, the accused knowing at the time that she is in that state, and Tindal, C. J., and Parke, B., remarked that, in Statute of Westminster, 2, C. 34, the offence of rape is described to be ravishing a woman 'where she did not consent,' and not ravishing *against her will.* But all the ten judges agreed that in this case, where the prosecutrix was made insensible by the act of the prisoner, and that an unlawful act, and when also the prisoner must have known that the act was against her consent at the last moment that she was capable of exercising her will, because he had attempted to procure her consent and failed, the offence of rape was committed."

The other three judges did not think that this could be considered as being sufficiently proved. T. R. B.

50. *Strangulation in Utero.*—Dr. Freney, of Remenville, communicates the following:—

On the 9th of October, I was called to attend a female, aged forty-three, in labour. She was small, but well made, and the mother of five children. The pains were regular and strong, the head presented and was low down, and in a quarter of an hour the child was born. It was motionless, the flesh soft and the lips red. The umbilical cord passed twice round the neck, and then under the left thigh, in such a manner that with every motion in the womb of the mother, the traction was immediately increased on the neck. On removing the circumvolutions of the cord, Dr. Freney was surprised to find a depression in the neck, corresponding with the size of the cord, and this was paler than the surrounding skin. After fifteen minutes of incessant efforts, respiration appeared, and the child is now living.

Dr. Freney inquires what would have been the opinion concerning these appearances in a case supposed to be criminal, particularly as he was obliged to use the insufflation of air into the lungs.

The answer of the editor is quite satisfactory. The present is a remarkable and an uncommon case. It illustrates the possibility of the umbilical cord acting as a cause of strangulation in the womb of the mother. Still the circular impression observed is only the semblance of what would have resulted from the actual application of a cord. There was no ecchymosis; the furrow was neither deep nor unequal, as is seen in ordinary strangulation. It is impossible, as the child survived, to show that the furrow did not in this instance take the appearance of parchment; or that the subjacent cellular tissue was injured. Each of these is seen in instances of criminality.—*Journal de Médecine et de Chirurgie*, Nov. 1850. T. R. B.

51. *Two Cases of Poisoning by Arsenic, and Remarkable Recovery under the free Use of Tartarized Antimony.*—The subjoined cases occurred recently in the practice of Mr. BEARDSLEY, of Heanor, formerly a student at Guy's Hospital. They illustrate forcibly the propriety of producing an early expulsion of the poison from the stomach by the aid of a quickly acting emetic.

Case 1.—The first case was that of a little boy, six years old, who swallowed a teaspoonful of the white arsenic of the shops. It was left on the floor of the house during the night, for the crickets to eat, and the child getting up first in the morning, found it, and eat it all up. In a very few minutes he was taken ill: there was vomiting; pain at the stomach; excessive thirst; cold extremities; quick and feeble pulse. At this juncture the parents had some vin. ant. tart. in the house, which they administered, and the child appeared better. When Mr. Beardsley arrived and was informed of this, he gave a full dose of the antim. tart.; vomiting was freely excited; the bowels were rapidly opened, and the child recovered with no further bad symptoms. The child was not seen to eat the arsenic, and possibly some might have been spilled, but none could be found, and the child was followed down stairs as quickly as possible; but the poison had been swallowed.

Case 2.—The next case was that of a girl twenty-two years of age. She bought two drachms of white arsenic, with the intention of poisoning herself. She was observed all Monday to be very unsettled, and refused food at dinner. Just before tea she purchased the arsenic, and, instead of tea, she put the arsenic into a cup, and poured hot water over it, and drank it off. She was immediately seized with violent pain in the region of the stomach; burning heat in the throat, and syncope. Mr. Beardsley was immediately sent for. When he saw her, which was only *half an hour* after she had taken the arsenic, she had cold extremities; very anxious look; pulse quick and hurried; violent pain in the stomach and bowels, which was very much aggravated on pressure.

The fauces had been tickled to excite vomiting, but ineffectually; and an ounce of castor oil and some milk had been administered. An emetic of sulphate of zinc was now given to her, but as this did not act, six grains of emetic tartar were subsequently administered. Most copious vomiting ensued, and the patient immediately said she was better. She stated that the ejected matter was similar in taste to that which she had taken in the cup, and that it was *sweetish*. Warm water and more emetic tartar (three grains) were administered, and she again vomited two or three times. She took two more doses of tartar emetic, and then violent purging, as well as vomiting, ensued. Next morning she was better; the pain had entirely left her. She took the remainder of the antimonial mixture, and she perfectly recovered; in fact she was almost well on Wednesday; she only felt debilitated on the Tuesday.

In this case, *two drachms* of powdered arsenic were taken in *warm water*, on an *empty stomach*. THE TREATMENT WAS WHAT DR. BECK SAYS SHOULD NEVER BE ADOPTED, AND YET THE RECOVERY WAS RAPID IN BOTH CASES. It may be mentioned that the girl had some melted butter given to her, before vomiting was established, *i. e.* before the emetic tartar was administered.

Remarks.—The use of tartarized antimony as an emetic has been generally condemned in cases of poisoning, because it has been supposed to have a tendency, during the nauseating stage, to promote the absorption of a poison. The above cases, and some others which might be quoted, show that this danger is of a hypothetical kind, and based on physiological principles not applicable to the treatment of such cases. If tartarized antimony aids absorption, it very quickly promotes the expulsion of the poison by vomiting; and the latter mode of operation is much more beneficial than the former is injurious. Better evidence of this could not be afforded than that yielded by the two cases here reported. Case 1 was that of a child only six years old. The quantity of poison swallowed was a teaspoonful, about 150 grains, an enormous dose when we consider the age of the patient. Further, it was swallowed in the early part of the morning, while the stomach was empty; and the rapid action of the poison was shown by the very early occurrence of the symptoms. Admitting that the whole teaspoonful of arsenic was not taken, it is quite clear that enough was swallowed to cause death, and the good effect of the tartar emetic was well indicated by its removing the early collapse.

—I have taken the above narrative from a number of the *London Medical Examiner*, which Dr. Hays was kind enough to send me. Subsequently, I have found that it is correctly copied from the *Guy's Hospital Reports*, vol. vii. part 1, p. 203.

I regret extremely that Mr. Taylor should have taken occasion to represent these TRIFLING (I use this term considerately) *cases* in an offensive manner as respects myself. In everything I have written on the subject of Medical Jurisprudence, I have endeavoured to do him and have done him ample justice. Due credit has been given, whenever anything original with him could be discovered. I challenge on this point the most careful scrutiny, commencing with his work entitled "ELEMENTS OF MEDICAL JURISPRUDENCE, *by Alfred S. Taylor*, vol. i. 8vo., London, 1836."

In the first edition of my work entitled "*Elements of Medical Jurisprudence*," published in 1823 (vol. ii. p. 254), when considering the proper treatment in cases of poisoning by arsenic, I said "*Tartrate of antimony should never be given.*" I continue of the same opinion still, and accordingly made the same observation in the 10th edition, published in Dec. 1850, vol. ii. p. 554: "*Tartrate of antimony should never be given.*" I warn every AMERICAN physician who reads this, that the recovery of a person in such a case is merely an *escape*, and that, although two may have recovered (from fortunate circumstances, such indeed as scarcely ever occur in instances of poisoning by arsenic), yet the third case, in which pure tartrate of antimony is administered, will probably prove fatal. But this, after all, is not the matter brought before the medical public by Mr. Taylor.

"The treatment" (he remarks) "was what Dr. Beck says should never be adopted, and yet the recovery was rapid in both cases." If Mr. Taylor had been actuated by the proper feelings, he would have written a far different sentence. He would have said, "The treatment was what Dr. Beck says should never be adopted," (*and in which statement he was perfectly justified by at least the negative testimony of Foderé, Orfila, Christison and others, and in particular by my own writings*,) "and yet the recovery was rapid in both cases." I do not add Paris and Fonblanque to the above authorities, for reasons which I shall presently assign.

The unjust and uncalled for remark of Mr. Taylor has induced me to look over the authorities consulted in preparing the first edition of my book. Foderé advises the use of warm water to promote vomiting, and, if this fail, then the use of the stomach-pump. Gordon Smith says that some do not hesitate to employ the most active emetics, "considering that the irritation of much fluid is an advantage in these cases. Others advocate bland liquids, as warm water, oil, linseed or chamomile tea." Orfila (*Sécours à donner aux Persons empoisonnées*) advises that vomiting should be promoted with many tumblerfuls of sugared water, or of warm or cold water, decoction of marshmallow root, or flaxseed tea. A mixture may also be given of equal parts of lime-water and sugared water.

What says Christison in his work on poisons—a work of some considerable authority in this country, although he may be elsewhere supplanted by later authorities? "If vomiting should be delayed, as often happens, for half an hour or more, advantage ought to be taken of the opportunity to administer an emetic of the sulphate of zinc, with the view of withdrawing the powder in mass before it is diffused over the stomach, and for the same purpose, milk should be drunk both before and after vomiting has begun, as it appears to be the best substance for enveloping the powder, and so procuring its discharge. The patient should never be allowed to exhaust his strength in retching, without a little milk or other fluid in his stomach."

And again, "Even emetics are unnecessary, when vomiting has commenced in consequence of the operation of the poison. When milk in sufficient quantity cannot be procured, strong farinaceous decoctions will probably prove useful," 2d edition, p. 322. The same is repeated in the 3d edition, p. 335, and again in the 4th edition, p. 365.

Is there anything in all the above, advising or recommending, or justifying, or even allowing, the use of tartrate of antimony?

But what says Mr. Taylor, the author of a work on Medical Jurisprudence, and a Treatise on Poisons, concerning this matter? In the first edition of "*A Manual of Medical Jurisprudence, by Alfred S. Taylor, &c., &c.,*" London, 1844, under the head of "TREATMENT" in cases of poisoning by arsenic (p. 143), the following remarks appear: "If vomiting does not already exist as a direct effect of the poison, sulphate of zinc may be exhibited, and the emetic effects promoted by mucilaginous drinks, such as linseed tea. When sulphate of zinc cannot be procured, a good substance for an emetic is powdered mustard, in the proportion of from one to two teaspoonfuls, in a glass of water, administered at intervals. A saponaceous liquid, made of equal parts of oil and lime-water, may also be given. While this invests the poison, the lime acts in some degree as a chemical antidote; although as arsenic is usually taken in the form of a coarse powder, and is very little soluble, chemical antidotes are not of much use. The stomach-pump may be usefully employed; but, unless the patient is seen early, remedial means are seldom attended with success." I pause to inquire whether tartrate of antimony is enumerated among the remedial means of Mr. Taylor.

In the 2d edition of the same *Manual*, London, 1846, p. 131, the same observations as above are repeated in the same words. In the 3d edition of the same *Manual*, London, 1849, p. 73, the same are again repeated; but the following remarks are added: "Mr. Tubbs informs me that, conjoined with the use of the stomach-pump and emetics of sulphate of zinc, he has found great service in a mixture of milk, lime-water, and albumen. Such a mixture is undoubtedly well fitted to envelop the particles of arsenic, and sheathe the coats of the stomach from the irritant action of the poison. This gentleman has sent me the report of no less than nine cases, some of them of a very severe kind, which he has thus successfully treated."

But besides the three editions of his *Manual*, Mr. Taylor has also published a work "*On Poisons, in relation to Medical Jurisprudence and Medicine.*" The copy I own was published in 1848, and is of as large bulk as the third edition of the *Manual*. It is, therefore, just to suppose that it will be more ample, on the subject of poisons, than it would have been possible to notice in the various editions of the *Manual*. Of course, it also considers the "Treatment in cases of poisoning by arsenic." And, at the risk of proving tedious, I will quote all that Mr. Taylor says respecting vomiting. If nothing else, it will prove how easy it is to pour *solid* as well as *liquid* substances from one receptacle into another.

"If vomiting does not already exist as a direct effect of the poison, sulphate of zinc should be exhibited, and its emetic effects promoted by mucilaginous drinks, such as linseed tea, milk, or albuminous liquids. When sulphate of zinc cannot be procured, a good substance for an emetic is powdered mustard, in the proportion of from one to two teaspoonfuls in a glass of water, administered at intervals. A saponaceous liquid, made of equal parts of oil and lime-water, may also be given. While this invests the poison, the lime tends to render less soluble that portion of the poison which is dissolved. The stomach-pump may be usefully employed; but, unless the patient is seen early, remedial means are seldom attended with success. I have known death to occur in a case where every particle of poison was found, on subsequent examination, to have been removed from the stomach. There are many instances on record in which the arsenic appears to have been early ejected by constant vomiting and purging. The recovery has, however, been commonly attributed to the supposed antidote. Mr. Tubbs, however, informs me that, conjoined with the use of the stomach-pump, and emetics of sulphate of zinc, he has found great service in a mixture of milk, lime-water, and albumen. Such a mixture is undoubtedly well fitted to envelop the particles of arsenic, and sheathe the coats of the stomach from the irritant action of the poison."—(p. 333.)

Such were Mr. Taylor's rules of practice, in addition to those that I have previously quoted. But I have not quite done with his "*Treatise on Poisons.*" He furnishes us also with certain *general* remarks on the "Treatment in Cases of Poisoning," and, at page 79, are the following:—

"*Emetics.*—With regard to clearing the stomach, the irritant poisons in general act as powerful emetics, and therefore all that we have to do is to promote vomiting by the free administration of warm water. In the case of oxalic acid, however, it is desirable to avoid giving much water, as the poison is dissolved and rapidly diffused over a large surface of the intestines, whereby it becomes more easily absorbed. If the vomiting should cease, or if it should not have taken place as an effect of the poison, we must then give an emetic of sulphate of zinc or copper, *i. e.* from fifteen to twenty grains at a dose, and, unless attended with marked effect, this must be repeated every quarter of an hour. IPECACUANHA AND TARTAR EMETIC SHOULD BE AVOIDED, for they are liable to produce excessive nausea, and during this state the poison becomes more rapidly absorbed. Supposing that we have not at hand the sulphate of zinc or copper, there is scarcely a house in the country that does not furnish an emetic in the shape of common mustard. From a teaspoonful to a dessertspoonful of this, in half a glass of warm water, may be given to the patient every five or ten minutes, according to the effect. The back of the throat may be at the same time tickled with a feather. If there should be no mustard, then a thick mixture of yellow soap and warm water may serve as a substitute."

"*It is right to bear in mind that most of these emetic substances are themselves irritant, and therefore a proper degree of caution must be observed in giving them.* In all cases, where the symptoms ARE those of irritant poisoning, the administration of viscid or mucilaginous liquids is advisable. Barley-water, decoction of linseed, flour and water mixed in the form of paste, albumen, or a mixture of oil and lime-water, or yellow soap and water, may be freely given. These viscid substances serve to protect the coats of the stomach, to lock up the undissolved particles of poison, and therefore favour its expulsion during the act of vomiting."

The reader has now before him the varying opinions of Mr. Taylor on the propriety of the exhibition of tartar emetic in cases of poisoning by arsenic, and he will judge, accordingly, of the propriety of bringing forward my name so prominently.

I have, in another place, stated that I would not quote Paris and Fonblanque, and my reason I may now briefly give. Dr. Paris received a certain prize, as the author of the best work on medical jurisprudence, much to the annoyance of Mr. Taylor. I am content with the decision, particularly if the statement of the *London Medical Examiner* be correct, that Mr. Taylor is the editor of the *London Medical Gazette.* I have been at a loss to understand the contemptible remarks and insinuations occasionally appearing in its pages, until my suspicions were thus resolved into certainty. I doubt, however, whether the matter would have rested to the present time, if my friends Dr. Darwall, and particularly Dr. William Dunlap (the "Tiger Dunlap" of *Fraser's Magazine*) had not gone down to the grave. There is another, but recently deceased, who also keenly felt the anonymous quirps and hints of a pettifogging critic, and who only waited for a name, to place the individual in his proper light before the medical public.

In all this, let it be distinctly understood that my appeal is to the American Medical Profession alone. I expect no justice from "Household" cliques of reviewers, whose power and influence are dependent on the frail life of a female, and who use their temporary ascendency in depreciating whatever interferes with their present objects. T. R. B.

52. *Researches on Gestation.* By M. COSTE.—Of the young females whom I have dissected at the Morgue in Paris, there were quite a number in whom the ovum was either in a state of complete maturation, or detached, and on its way to the uterus. In all of these, I found the uterus lined with a mucous membrane of such thickness that, if its constancy had not proved to me that it was a natural result, I should have deemed it a morbid change.

This membrane, of which I speak, is in a great measure formed by glands opening on the inner surface, by orifices visible to the naked eye. It has a thickness of at least a fourth, and indeed a third, of that of the muscular one, and in some instances it forms circumvolutions or folds pressed upon each other in the uterine cavity. The anatomical specimens herewith presented will prove this.

In cases of extra-uterine pregnancy, this mucous membrane is still greatly increased. It forms folds as voluminous as the cerebral circumvolutions, and is sometimes not less than ten millimetres in thickness.

It is thus demonstrated that whenever the ovum arrives at maturity in the ovarium, or when it is detached, the uterine mucus undergoes an evolution, to receive it. And this being proved, it remained to ascertain whether the Fallopian tubes were always open throughout their whole length, or whether, at their junction with the uterus, they were closed with a pseudo-morphous membrane, destined to become the deciduous membrane. My observations incline me to the first opinion.

In females dying through suicide from the twentieth to the thirtieth day after conception (as well as in females the condition of whom I have already noticed), the tubes communicate freely with the uterus, and the mucous membrane, having become still more thickened, is also present; but here the ovum, instead of being in the uterine cavity, where I expected to find it, was in fact buried in the coats of the hypertrophied mucous membrane. So manifestly is this shown in the anatomical specimens accompanying the memoir, that, if the uterus alone had been examined, it would have been deemed extremely doubtful whether pregnancy had occurred.

Pregnancy is thus interstitial. The ovum, after passing into the uterus, is probably buried, within a few days, in the mucous membrane of that organ. In a short time, it enlarges and distends its covering—which, in the opinion of M. Coste, finally develops into the three membranes, or folds, which have been noticed by anatomists—the parietal or uterine, the scrotine or placental, and the reflected. These organs are exfoliated after delivery, and, in proof of this, he exhibited specimens taken from females who died in twenty-four hours and in four weeks thereafter.

M. Coste is of opinion that, from the above results, we can explain various phenomena as yet doubtful or undetermined as to their cause, and he enumerates, among these, the hemorrhages that follow delivery, the lochia, and indeed certain cases of sterility. He promises a second memoir.—*Comptes Rendus*, vol. xxxi. No. 17, October 21, 1850. T. R. B.

53. *Pathological Appearances in Cases of Strangulation or Hanging, Apoplexy, &c.*, (from Professor J. H. Bennet's Clinical Lectures.)—*The Pathological Laws which Regulate Diseased Functions of the Nervous System.*—For the purpose of diagnosis and treatment, it is a matter of great importance to attend to the following generalisations:—

(1.) *The amount of fluids within the cranium must always be the same so long as its osseous walls are capable of resisting the pressure of the atmosphere.* There are few principles in medicine of greater practical importance than the one we are about to consider—the more so, as many able practitioners have lately abandoned their former opinions on this head, and on what I consider to be very insufficient grounds. On this point, therefore, I cannot do better than condense and endeavour to put clearly before you the forcible arguments of the late Dr. John Reid, with such other considerations as have occurred to myself.

That the circulation within the cranium is different from that in other parts of the body, was first pointed out by the second Monro. It was tested experimentally by Dr. Kellie of Leith, ably illustrated by Dr. Abercrombie, and successfully defended by Dr. John Reid. The views adopted by these distinguished men were, that the cranium forms a spherical bony case, capable of resisting the atmospheric pressure, the only openings into it being the different foramina by which the vessels, nerves, and spinal cord pass. The encephalon, its membranes and blood-vessels, with perhaps a small portion of the cerebro-spinal fluid, completely fill up the interior of the cranium, so that no substance can be dislodged from it without some equivalent in bulk taking its place. Dr. Monro used to point out that a jar, or any other vessel similar to the cranium, with unyielding walls, if filled with any substance, cannot be emptied without air or some other substance taking its place. To use the illustration of Dr. Watson, the contents of the cranium are like beer in a barrel, which will not flow out of one opening, unless provision be made at the same time that air rushes in. The same kind of reasoning applies to the spinal canal, which, with the interior of the cranium, may be said to constitute one large cavity, incompressible by the atmospheric air.

Before proceeding further, we must draw a distinction between pressure on, and compression of, an organ. Many bodies are capable of undergoing a great amount of pressure without undergoing any sensible decrease in bulk. By compression must be understood, that a substance occupies less space from the application of external force, as when we squeeze a sponge, or compress a bladder filled with air. Fluids generally are not absolutely incompressible, yet it requires the weight of one atmosphere, or fifteen pounds on the square inch, to produce a diminution equal to $\frac{1}{20,000}$th part of the whole. Now this is so exceedingly small a charge upon a mass equal in bulk to the brain, as not to be appreciable to our senses. Besides, the pressure on the internal surface of the blood-vessels never exceeds ten or twelve pounds on the square inch, during the most violent exertion, so that, under no possible circumstances, can the contents of the cranium be diminished even the $\frac{1}{20,000}$th part. When the brain is taken out of the cranium, it may, like a sponge, be compressed, by squeezing fluid out of the blood-vessels; but during life, surrounded, as it is, by unyielding walls, this is impossible. For let us, with Abercrombie, say that the whole quantity of blood circulating within the cranium is equal to 10; 5 in the veins, and 5 in the arteries: if one of these be increased to 6, the other must be diminished to 4, so that the same amount, 10, is always preserved. It follows that, when fluids are effused, blood extravasated, or tumours grow, a corresponding amount of fluid must be pressed out, or of brain absorbed, from the physical impossibility of the cranium holding more matter. At the same time, it must be evident that an increased or diminished amount of pressure may be exerted on the brain, proportioned to the power of the heart's contraction, the effect of which will be, not to alter the amount of fluids within the cranium, but to cause, using the words of Abercrombie, "a change of circulation" there.

Dr. Kellie performed numerous experiments on cats and dogs, in order to elucidate this subject. Some of these animals were bled to death by opening the carotid or femoral arteries; others by opening the jugular veins. In some the carotids were first tied, to diminish the quantity of blood sent to the brain, and the jugulars were then opened, with the view of emptying the vessels of the brain to the greatest possible extent; while, in others, the jugulars were first secured, to prevent as much as possible the return of the blood from the brain, and one of the carotids was then opened. He inferred, from the whole inquiry, which was conducted with extreme care, "That we cannot, in fact, lessen, to any considerable extent, the quantity of blood within the cranium by arteriotomy or venesection; and that when, by profuse hemorrhages destructive of life, we do succeed in draining the vessels within the cranium of any sensible portion of red blood, there is commonly found an equivalent to this spoliation in the increased circulation or effusion of serum, serving to maintain the plenitude of the cranium."

Dr. Kellie made other experiments upon the effects of position immediately after death from strangulation or hanging. He also removed a portion of the unyielding walls of the cranium in some animals, by means of a trephine, and then bled them to death; and the differences between the appearances of the brain in these cases, and in those where the cranium was entire, were very great. One of the most remarkable of these differences was its shrunken appearance in those animals in which a portion of the skull was removed, and the air allowed to gravitate upon its inner surface. He says: "The brain was sensibly depressed below the cranium, and a space left, which was found capable of containing a teaspoonful of water."

It results, from these inquiries, that there must always be the same amount of fluids within the cranium so long as it is uninjured. In morbid conditions these fluids may be blood, serum, or pus; but in health, as blood is almost the only fluid present (the cerebro-spinal fluid being very trifling), its quantity can undergo only very slight alterations. There are many circumstances, however, which occasion local congestions in the brain, and consequently unequal pressure on its structure, in which case another portion of its substance must contain less blood, so that the amount of the whole, as to quantity, is always preserved. These circumstances are mental emotions, hemorrhages, effusions of serum, and morbid growths. Some congestions, or local hyperæmias, in themselves constitute morbid conditions; and nature has, to a great extent, provided against their occurrence, under ordinary circumstances, by the tortuosity of the arteries and the cerebro-spinal fluid, described by Magendie.

The views now detailed had been very extensively admitted into pathology, when Dr. Burrows, of St. Bartholomew's Hospital, endeavoured to controvert them, first in the Lumleian Lectures of 1843, and subsequently in a work published in 1846, entitled, "On Disorders of the Cerebral Circulation, and on the Connection between Affections of the Brain and Diseases of the Heart." Dr. Burrows, however, evidently formed the most confused notions of the doctrine we are advocating; for, instead of stating it as propounded by its authors, he *actually misrepresented it*, as Dr. Reid pointed out. Thus, he is always combating the idea that blood-letting, position, strangulation, &c., cannot affect the *blood in the brain;* whereas the real proposition is, that they cannot alter the *fluids within the cranium.* By thus confounding blood with fluid, and brain with cranium, he has only contrived to overthrow a theory of his own creation.

Dr. Burrows has brought forward several observations and experiments, which he considers opposed to the theory now advocated. His facts are perfectly correct. I myself have repeated his experiments on rabbits, and can confirm his descriptions. It is the inferences he draws from them that are erroneous. For the paleness which results from hemorrhage, and the difference observable in the colour of the brain, when animals, immediately after death, are suspended by their ears or by their heels, is explicable by the diminished number of coloured blood particles in the one case, and by their gravitation downwards in the other. That the amount of fluid within the cranium was in no way affected, is proved by the plump appearance of the brains figured by Dr. Burrows, and the total absence of that shrunken appearance so well described by Dr. Kellie.

Neither does our observation of what occurs in asphyxia or apnœa oppose the doctrine in question, as Dr. Burrows imagines, but rather confirms it. On this point the following observations by Dr. John Reid are valuable. He says: "If any circumstance could produce congestion of the vessels within the cranium, it would be that of death by hanging; for then the vessels going to and coming from the brain are, with the exception of the vertebral arteries, compressed and then obstructed. These two arteries, which are protected by the peculiarity of their course through the foramina of the transverse processes of the cervical vertebræ, must continue for a time to force their blood upon the brain, while a comparatively small quantity only can escape by the veins. Indeed, the greater quantity of blood carried to the encephalon by the vertebrals returns by the internal jugulars, and not by the vertebral veins, which are supplied from the occipital veins of the spinal cord; and the anastomoses, between the cranial and vertebral sinuses, could carry off a small quantity of the blood only, transmitted along such large arteries as the vertebrals. And yet it is well known that there is no congestion of the vessels within the cranium after death by hanging, however gorged the external parts of the head may be by blood and serum." This is admitted by Dr. Burrows, although he endeavours to get rid of so troublesome a fact by a gratuitous hypothesis, which will not bear a moment's examination, but for the refutation of which I must refer to the works of Dr. Reid.*

On the whole, whether we adopt the expressions of local congestion, of change of circulation within the cranium (Abercrombie), or of unequal pressure (Burrows), our explanation of the *pathological* phenomena may be made equally correct, because each term implies pretty much the same thing. But if we imagine that venesection will enable us to diminish the amount of blood in the cerebral vessels, the theory points out that this is impossible, and that the effects of bleeding are explained by the influence produced on the heart, the altered pressure on the brain, exercised by its diminished contractions, and the change of circulation within the cranium thereby occasioned.

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* Monthly Journal, August, 1846: Physiological, Anatomical, and Pathological Researches, No. XXV.

I have entered somewhat fully into this theory, because, independent of its vast importance in a practical point of view, it is one which originated in, and has always been maintained by, the Edinburgh School of Medicine. Singular to say, notwithstanding the obvious errors and fallacies in Dr. Burrows' work, no sooner did it appear than the whole medical press of England and Ireland adopted its conclusions, and even Dr. Watson, in the last edition of his excellent work, also abandoned the theory of Monro, Kelly, and Abercrombie. But so far is this theory concerning the circulation within the cranium from being shaken by the attack of Dr. Burrows, that it may be said now to stand on a firmer basis than ever, owing to that attack having drawn forth the convincing reasoning and unanswerable arguments of so sound an anatomist, physiologist, and pathologist as the late Dr. John Reid.

(2.) *All the functions of the nervous system may be increased, perverted, or destroyed, according to the degree of stimulus or disease operating on its various parts.* Thus, as a general rule, it may be said that a slight stimulus produces increased or perverted action; whilst the same stimulus, long continued or much augmented, causes loss of function. All the various stimuli, whether mechanical, chemical, electrical, or psychical, produce the same effects, and in different degrees. Circumstances influencing the heart's action, stimulating drinks or food, act in like manner. Thus, if we take the effects of alcoholic drink, for the purpose of illustration, we observe that, as regards combined movements, a slight amount causes increased vigour and activity in the muscular system. As the stimulus augments in intensity, we see irregular movements occasioned, staggering, and inability of directing the limbs. Lastly, when the stimulus is excessive, there is complete inability to move, and the power of doing so is temporarily annihilated. With regard to sensibility and sensation, we observe cephalalgia, tingling, and heat of skin, tinnitus aurium, confusion of vision, muscæ volitantes, double sight, and lastly, complete insensibility and coma. As regards intelligence, we observe at first rapid flow of ideas, then confusion of mind, delirium, and lastly sopor and perfect unconsciousness. In the same manner pressure, mechanical irritation, and the various organic diseases, produce augmented, perverted, or diminished function, according to the intensity of the stimulus applied, or amount of structure destroyed.

Thus it has been shown, that excess or diminution of stimulus, too much or too little blood, very violent or very weak cardiac contractions, and inflammation or extreme exhaustion, will, so far as the nervous functions are concerned, produce similar alterations of motion, sensation, and intelligence. Excessive hemorrhage causes muscular weakness, convulsions, and loss of motor power, perversions of all the sensations, and lastly, unconsciousness from syncope. Hence the general strength of the frame cannot be judged of by the nervous symptoms, although the treatment of these will be altogether different, according as the individual is robust or weak, has a full or small pulse, &c. These similar effects on the nervous centres from apparently such opposite exciting causes, can, it seems to me, only be explained by the peculiarity of the circulation previously noticed. A change of circulation within the cranium takes place, and whether arterial or venous congestion occurs, pressure on the organ is equally the result. The importance of paying attention to this point in the treatment must be obvious.

(3.) *The seat of the disease in the nervous system influences the nature of the phenomena or symptoms produced.* It is a matter of very great importance to ascertain how far certitude in diagnosis may be arrived at, and the seat of the disease ascertained. On this subject it may be affirmed that, although clinical observation combined with pathology has done much, more requires to be accomplished. As a general rule, it may be stated that disease or injury of one side of the encephalon, above the decussation in the medulla oblongata, especially influences the opposite side of the body; whilst, if the spinal cord be affected below the decussation, the influence produced is not crossed, but direct. It is said that some very striking exceptions have occurred to this rule, but these at any rate are remarkably rare. Besides, it has always appeared to me probable that, inasmuch as extensive organic disease, if occurring slowly, may exist without producing symptoms, whilst it is certain most important symptoms may be occasioned without organic disease, even these few exceptional cases are really not opposed to the general law. Then, as a general rule, it may be said that diseases of the brain proper are more especially connected with perversion and alteration of the intelligence; whilst disease of the cranial portion of the spinal cord and base of the cranium is more particularly evinced by alterations of sensation and motion. In the vertebral portion of the cord, the intensity of pain and of spasm, or want of conducting power, necessary to sensation and voluntary motion, indicates the amount to which the motor and sensitive columns are affected. Further than this we can scarcely generalize with prudence, although there are some cases, as we shall subsequently see, where careful observation has enabled us to arrive at more positive results.

The fatality of lesions affecting various parts of the nervous centres varies greatly. Thus the hemispheres may be extensively diseased, often without injury to life, or even permanent alteration of function. Convulsions and paralysis are the common results of disease of the ganglia, in the cranial portion of the cord. The same results from lesion of the pons Varolii. But this, if it affect the medulla oblongata, where the eighth pair originates, or injury to this centre itself, is almost always immediately fatal.

(4.) *The rapidity or slowness with which the lesion occurs influences the phenomena or symptoms produced.* It may be said, as a general rule, that a small lesion, for instance a small hemorrhagic extravasation, occurring suddenly, and with force, produces, even in the same situation, more violent effects than a very extensive organic disease which comes on slowly. Here, however, much will depend upon the seat of the lesion. Very extraordinary cases are on record, where large portions of the nervous centres have been much disorganized, without producing anything like such violent symptoms as have been occasioned at other times by a small extravasation in the same place. Here again the nature of the circulation within the cranium offers the only explanation, for the encephalon must undergo a certain amount of pressure, if no time be allowed for it to adapt itself to a foreign body; whereas any lesion coming on slowly enables the amount of blood in the vessels to be diminished according to circumstances, whereby pressure is avoided.

(5.) *The various lesions and injuries of the nervous system produce phenomena similar in kind.* The injuries which may be inflicted on the nervous system, as well as the morbid appearances discovered after death, are various. For instance, there may be an extravasation of blood, exudation of lymph, a softening, a cancerous tumour, or tubercular deposit, and yet they give rise to the same phenomena, and are modified only by the circumstances formerly mentioned, of degree, seat, suddenness, &c. Certain nervous phenomena also are of a paroxysmal character, whilst the lesions supposed to occasion them are stationary or slowly increasing. It follows that the effects cannot be explained by the nature of the lesions, but to something which they all have in common; and this, it appears to me, may consist of—1st, Pressure with or without organic change; 2d, More or less destruction or disorganization of nervous texture. Further, when we consider that the same nervous symptoms arise from irregularities in the circulation from increased as well as diminished action, sometimes when no appreciable change is found, as well as when disorganization has occurred, the theory of local congestions in the nervous centres seems to me the most consistent with known facts. That such local congestions do frequently occur during life, without leaving traces detectible after death, is certain; whilst the occurrence of molecular changes, or other hypothetical conditions which have been supposed to exist, have never yet been shown to take place under any circumstances.—*Monthly Journal of Medical Science*, March, 1851.

T. R. B.

54. *Fatal Effects from Chloroform.*—[At a meeting of the Surgical Society of Ireland (Jan. 25th, 1851), a letter was read from Dr. Geo. Roe, of Cavan, containing the particulars of a case of death from the administration of chloroform; and the writer alludes to two other cases in which death supervened on the operation table, or very soon after removal from it.]

James Jones, twenty-four years of age, who had been a patient in the Cavan Infirmary about two years ago for venereal complaint (for which he had used a very light course of mercury, and of which he was discharged cured), was again admitted on the 26th of February last for a disease of the instep and ankle, supposed to be of a scrofulous nature. He said he had felt a little pain in the foot while in the infirmary for the venereal complaint, but he did not think it of such consequence as to require any attention; latterly, however, the pain and swelling had increased so much, that he was obliged to give over his work, and apply again for admission into the infirmary. It remained for a long time indolent, yet very painful. A great variety of remedies, both local and constitutional, were tried without any advantage. The disease proceeded slowly but steadily on to suppuration, unrestrained by any remedies; afterwards, extensive ulceration, with sloughing of the skin and cellular tissue around the ankle and back part of the leg, as well as of the instep, which gave reason to fear the metatarsal bones and the astragalus were probably the seat of the disease. All this morbid action produced, of course, high degree of hectic fever, with severe diarrhœa, alternating with night sweats, great debility, and emaciation. He had also, for a few weeks, severe bleeding at the nose, with some pulmonary symptoms, as general thoracic pain and shortness and embarrassment in his breathing, but no cough. These hectic symptoms had increased to such a degree in June and July, that his life was despaired of. At this time the stethoscopic signs were very unfavourable. There appeared a general dulness in many parts of the chest, as if the external surface of the lung was congested, or hepatized; but he had *no cough.* By a long course of the usual tonic remedies, bark, wine, chalk, opium, &c., he greatly recovered from all his bad symptoms, having only a most extensive ulceration of the foot and leg, which he saw was quite incurable, and he repeatedly expressed his wish to have the operation of amputation of the leg performed. This Dr. R. consented to, but with some doubt and hesitation, fearing that it would give but a slight chance of life, from the extreme debility of the patient.

Jones was of a very peculiar and very sensitive temperament, yet very patient and uncomplaining, and endeavoured to conceal feelings and expressions which many with less cause of suffering would give way to. For this reason Dr. R. wished by every means to allay and prevent the agitation and excitement inseparable from the operation.

Jones was cheerful, and appeared to be firm and courageous, but when placed on the table the heart's action was very *quick and weak*, but he did not appear faintish, or more pale than usual. Dr. R. *then saw* Mr. Nalty, the apothecary, *measure one drachm* of the chloroform, in the small minim glass measure, and pour it upon a little folded lint, which was placed in an oval hollowed sponge, held in the hand with a small towel. Recollecting this chloroform had been used in another case, and finding some little delay in producing the anæsthetic effects, and supposing the strength of the chloroform might be a little weakened, as the bottle had not been kept very closely stopped, Dr. R. directed Mr. Nalty to add *thirty* drops more to that already on the lint.

Dr. R. then applied the sponge, &c., to the patient's nose, directing him to keep his mouth shut. Mr. Brice had scarcely screwed up the tourniquet, which had been placed previously on the thigh, and while Dr. R. was examining the state of the circulation in the tibial arteries, to prevent the least unnecessary loss of blood, and which could not have occupied one minute—certainly he could not have made or taken *fifteen* inspirations—when Dr. Halpin said the anæsthetic effects were produced. This struck Dr. R. as being unusually quick and sudden, and on removing the towel from the face there was a slight convulsive action of the left eyelids, and the lids partially open, and a small quantity of saliva (froth) at the mouth. Dr. R. felt rather uneasy; and on a more minute and instant examination of the heart, the eyes, muscles of the limbs, &c., found the patient *dead.* Every means within reach were resorted to, to try and restore animation. The strongest ammonia and hartshorn were applied to the nostrils, the fauces, and palate; cold air, cold water, to the surface; and afterwards scalding water was applied over the region of the heart; inflation of the lungs; general friction of the body; change of posture, were all, in turn and rapid succession, tried, but without the least effect. Dr. R. had no means of making or procuring oxygen gas, and unfortunately his portable galvanic apparatus was not then in order or ready for use; so that he had the sad and painful spectacle of his patient *killed*, as if by a stroke of lightning, in less than *one* minute, before his eyes.

Dr. R. asks, what, in connection with the chloroform, was the cause of this catastrophe? The patient's bowels had been fully and freely opened the day before the intended operation, and also on the morning of that day. He had taken only a small quantity of bread with his tea, at nine o'clock, three hours before.

He was placed in the recumbent posture, his head being very little raised by a pillow, and he appeared as well on that morning, if not better, than he had been for some time; but he was very weak, and hectic symptoms were very evident, and his former diarrhœa had greatly reduced him; yet he was not more exhausted or weak than others on whom Dr. R. had operated, and successfully, without the use of chloroform. The chloroform was taken out of the same bottle which he had used a few weeks previously for an operation on a delicate woman with strangulated hernia, and with whom he used the same quantity (℥iss) on the lint. In this case it was four or five minutes before the anæsthetic effect was produced, and she recovered from the effect of it before she was taken off the table.

"I must say," observes Dr. R., "that I have the impression that the success of my capital operations, and particularly those attended with loss of blood, has not been so satisfactory to me as it was previous to the introduction of anæsthetics. But I have, in reflecting on this, attributed it to other causes, partly moral, and partly physical, believing that the change of food, and of outward circumstances of various kinds, has made a very considerable change in the subjects and constitutions of the class of people with whom I have an intercourse and communion.

"But to return, I would wish to know what way I have erred, and what was the cause of my misfortune in the death of my patient? It may be said the case was not a subject fit for chloroform, on account of his weak and hectic state. Now, this appears to me to be a question requiring all the experience, and all the observation and judgment, which can be brought to bear upon it. If we are not to use such an agent in the *weak*, the timid, and highly sensitive patient, for what class of patients do we require anæsthetics? I have had several protracted and painful operations before and since the great discovery of anæsthetics, of ether and chloroform, and without the use of these my patients have borne their sufferings without a stir or a groan, and I have often observed to my assistants that no anæsthetic could have produced greater quiet or composure."

"When we hear the very indiscriminate, and I would almost say the unjustifiable use made of chloroform by every description of practitioner, it is scarcely a matter of surprise that much more mischief is not done; yet the medical records and other public journals furnish proofs enough of its great and fatal danger, sufficient to warn the young and inexperienced from using, without due care and knowledge, such a remedy, and one possessing such awful power over human life. I wish I could say that all the medical records of its use and advantages had been given with that fidelity, truth, and honesty, which such a subject requires. It is not by the relation of a number of successful cases, however great, that the laws and rules which should regulate its exhibition, can be laid down or ascertained. We ought to have a faithful account and record of the unsuccessful, dangerous, and fatal cases in which it has been employed; and I fear many who have extolled its use and benefits have most unjustly and unworthily suppressed its dangers, bad effects, and even its fatality in their own hands. I have never used it in midwifery practice, but, from my knowledge of it, I should say that some of our brethren in the north have used it in that branch of the profession to an extent that neither experience, prudence, nor common honesty would warrant."—*Dublin Medical Press*, March 26, 1851.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Wills' Hospital—Service of Dr. ISAAC PARRISH—*Cases discharged from Jan. 1st,* 1851, *to April 1st,* 1851.

	Cured.	Relieved.	Incurable.
Granular ophthalmia,	4	2	0
Catarrhal "	1	0	0
Scrofulous "	8	0	0
Purulent "	3	0	0
Ophthalmia tarsi,	4	0	0
Chronic conjunctivitis,	1	1	0
Acute "	1	0	0
Ulcer of the cornea,	4	0	0
Corneitis,	4	0	0
Amaurosis,	0	1	1
Cataract with amaurosis,	0	1	1
Staphyloma,	1	0	0
Syphilitic iritis,	2	0	0
Wound of the eye,	2	0	0
Inflammation of the knee,	1	0	0
Ulcer of the leg,	1	0	0
	37	5	2

Wills' Hospital Dispensary—cases treated:—

Acute conjunctivitis,	5	Scrofulous ophthalmia,	20
Chronic "	9	Phlyctenular "	8
Granular "	4	Pustular "	3
Catarrhal "	12	Tarsal "	16
Rheumatic "	3	Corneitis,	3
Iritis,	1	Opacity of the cornea,	3
Injury of the eye,	2	Partial amaurosis,	10
Specks of iron on the cornea,	5	Pterygium,	2
Photophobia,	2	Ulcer of the cornea,	2
Albugo,	1	Entropion,	8
Total,			120

Corneitis.—Peter Broadrick, æt. nineteen, weaver, native of Ireland, of scrofulous diathesis, was admitted to the hospital, Nov. 30th, 1850. For three weeks previous, he had suffered with acute disease of the eye, which had come on spontaneously and gradually. He had been treated in several places before he applied here, receiving no benefit, and becoming slowly worse. At the time of his admission the vision of the diseased eye was entirely gone—the cornea was clouded with lymph, and so completely opaque as to hide the pupil. He had intolerance of light, profuse lachrymation, and slight pain, with increased vascularity of the conjunctiva. Immediately after his admission he was put upon the use of mercury in small doses with quinine. (Hyd. proto-iod. gr. j; Quin. sul. grs. ij. ter in die.) He continued the use of the mercurial with the quinine, with occasional interruptions of the mercurial, as symptoms of salivation appeared, for two months. He had at the same time a nutritious diet, with exercise in the open air when the state of the weather would permit. The results of this combined mercurial and tonic plan of treatment were most satisfactory. In ten days, the active inflammatory symptoms had disappeared, and from that time the effused lymph was gradually removed from the cornea. At the end of four weeks the pupil was visible through the margin of the cornea, and when discharged, Feb. 12th, the vision was nearly as good as in the unaffected eye. The vin. opii was occasionally used in the latter stages of the treatment as a local application. Dr. Parrish teaches, that nearly all cases of corneitis occur in scrofulous subjects; and to enable such subjects to bear mercurials, which are essential to the resolution of the inflammation, he gives quinine at the same time that the mercurial is given—from three to six grains of quinine daily, and he continues this combined use of the medicines named until the inflammation and its results are removed. His usual plan is to give minute doses of the mild chloride of mercury, frequently repeated through the day, on alternate days, and quinine on the intermediate days. In this way calomel may be given for a long time without danger of ptyalism. The occurrence of ptyalism he considers an unfortunate accident. There is now a little girl in the hospital on this plan of treatment, who was admitted on the 15th of January. She had been treated outside until the active inflammatory symptoms had subsided, but in both eyes the cornea was so obscured as to hide the pupil, and almost completely to destroy vision. The cornea of the left eye is now entirely clear, except a small portion in the centre; and the cornea of the right eye has become so far transparent as to enable an observer to see the pupil through its margin. Dr. P. anticipates an entire restoration of vision for her.

Ungt. Picis.—The tar ointment was first used by Dr. Parrish during his service at this Hospital in the year 1850, in ophthalmia tarsi. Since then he has used it in nearly all the cases of this form of ophthalmic disease found in the hospital wards, and in the hospital dispensary. He has found it far more efficient in eradicating this obstinate affection than any of the agents usually employed. He directs it to be carefully rubbed in at the roots of the cilia at bedtime, and to be washed away with Castile soap and tepid water on the following morning. He was led to employ it in these cases from regarding the eruption on the margin of the lids analogous to tinea capitis, over which the tar ointment is known to have such an efficient curative influence. So far as he has used this agent under my observation, every case has been cured where the remedy has been persevered in. About twenty-five cases have come under my notice during eight months of Dr. Parrish's service at the Hospital.

A. F. MACINTYRE, M. D., *Resident Physician.*

WILLS' HOSPITAL, *April* 1851.

DOMESTIC SUMMARY.

Connection of Amaurosis with Granular Degeneration of the Kidneys and Protrusion of the Eyeball.—Dr. HAYS called the attention of the Philadelphia College of Physicians (Jan. 6th, 1851) to the connection which existed between amaurosis and granular disease of the kidneys, and likewise with protrusion of the eyeball. He had seen several cases of amaurosis with striking protrusion of the eyeball, all accompanied during the life of the patients with albuminous urine, and after death presenting granular disease of the kidneys. These cases had convinced him that amaurosis was very frequently a consequence of this peculiar renal disease. In all these cases there was also a peculiar brownish-yellow tint of the skin, particularly that of the face, which Dr. H. was inclined to consider as characteristic of Bright's disease of the kidney.

The first case to which he called attention was one already reported to the College. The preparation of the kidney, exhibiting its diseased condition, is now in the pathological cabinet of the College. The gentleman who was the subject of this case had been under the care of a homœopathist previously to being seen by Dr. H. There was decided prominence of the eyeball, and the peculiar complexion alluded to, and, as the preparation will show, the kidneys were the seat of granular disease. The patient died in a day or two after he was seen by Dr. H.

The second case occurred in the wife of a physician. She was a healthy young woman at the period of her marriage. About fourteen months afterwards, she was threatened with abortion, at which period she was largely bled, and in a short time subsequently was seized with convulsions, and aborted at the fifth month of pregnancy. Soon after she became amaurotic, and Dr. H. was requested to see her. She was then anæmic—as was supposed in consequence of the loss of blood she had sustained—and there was a very marked prominence of her eyeballs. An aneurismal tumour existed at the bend of the arm, from a wound of the artery made when she had been bled, and considerable dropsical effusion into the cellular tissue of the face and limbs. The husband was not aware that her urine presented any abnormal condition; on examination, however, it was found to be highly albuminous. The patient went on from bad to worse, and ultimately, after several convulsive paroxysms, died. There was no doubt in this case of the existence of granular degeneration of the kidneys. Although no *post-mortem* examination was made, still the condition of the urine plainly pointed out this condition of the renal organs.

The third case had, previously to coming under the care of Dr. Hays, been treated homœopathically. The patient, an athletic farmer, in the meridian of life, had gradually become amaurotic—he was apathetic, taciturn, and inclined to sopor. Complexion brownish-yellow. His limbs and countenance slightly œdematous. Bowels regular, eyes slightly but very perceptibly protruded. Urine spare in quantity and highly albuminous. The patient became more and more amaurotic, and torpid. The dropsical effusion increased in extent. He experienced one or two attacks of convulsions. Complained in the last week of the existence of acute pain in his left side. A variety of treatment was tried with little or no effect. He finally died, and upon examination, the kidneys were found to be granular, and the liver affected with cirrhosis. The left pleura presented indications of recent inflammation.

The fourth case was that of a married lady whom Dr. H. was then attending. When pregnant with her first and only child, she had become dropsical; her sight had gradually become impaired. When seen by Dr. H. the balls of her eyes were exceedingly prominent, so much so as to make her ashamed to be seen abroad. She was excessively debilitated, very anæmic, and her complexion was of a brownish-yellow tint. There was a swollen and puffy condition of the face, and some degree of apathy. She was placed upon a good diet and a tonic course of treatment. Under this the eyeballs became less prominent, and puffiness of the face diminished, the albuminous condition of the urine decreased, her strength and mental activity increased, and her power of vision was improving, when, contrary to Dr. H.'s express advice, she greatly fatigued herself by walking too far. Excessive prostration followed; but by perseverance in an invigorating course of treatment she is again mending, and Dr. H. entertained some hopes of her final recovery.

Dr. Hays had brought forward these cases to direct attention to the fact of the frequent dependence of amaurosis upon granular disease of the kidneys, and to the importance of an early diagnosis of these cases, it being in their early stage alone that we can hope, by an appropriate treatment, to effect their cure.

In every case of amaurosis attention should be paid to the state of the kidneys and the condition of the urinary discharge.

Dr. Pepper has observed an amaurotic condition of the eyes in connection with granular disease of the kidneys. A morbid prominence of the eyeballs has not, however, been noticed by him in such cases. Dr. P. saw in the Pennsylvania Hospital a case of amaurosis in a female labouring under granular disease of the kidneys. The patient was discharged much improved, but subsequently died of convulsions.—*Quarterly Summary of the Tran. of the Philad. College of Phys.* vol. i. No. 2, N. S.

Cod-liver Oil in Scrofulous Affections and in Consumption.—Dr. Hays stated to the Philadelphia College of Physicians (Feb. 6, 1851) that he had employed the cod-liver oil extensively, in the Wills' Hospital and in private practice, during the last three years, in scrofulous ophthalmia, in cases of granular lids, in scrofulous enlargement of the external glands, in cases of hip disease, and in the various forms of external scrofula, with the best effects. In scrofulous ophthalmia he had found it of all remedies the most efficacious. Under its use the constitution becomes invigorated; the glandular swellings are dissipated; and the cutaneous affection so commonly met with about the face and ears disappears. He has, also, employed it in several cases of granular lids with the most favourable results. In this affection, patients are very liable to relapse, from slight causes; this tendency he has found to be removed by the use of the cod-liver oil, alone, or in conjunction with the syrup of the proto-iodide of iron. In the case of a lad now under treatment affected with scrofulous enlargement of the cervical glands, chronic conjunctivitis, and granular lids, with deposit of lymph in the cornea, and intense photophobia, by the use of the cod-liver oil and proto-iodide of iron, with the occasional application to the eye of the liquor plumbi, all the symptoms of disease are rapidly disappearing. The patient can bear the light without inconvenience, can read small print, and has all the general appearance of restored health. He has escaped a relapse now for four months. The photophobia has disappeared entirely. In another case of excessive photophobia, with granular lids and penetrating ulcer of the cornea, the cod-liver oil has been used (at the suggestion of the *interne* of the Wills' Hospital, Dr. Macintyre) with the most decided advantage.

Dr. H. has now employed the cod-liver oil in from two hundred to two hundred and fifty cases of scrofulous ophthalmia and granular lids, and in most of these cases the benefit resulting from its use has been very striking.

Dr. Condie remarked that he had employed the cod-liver oil pretty extensively. In all the forms of external scrofula, including scrofulous ophthalmia, he had certainly seen much good result from its use; the indications of strumous disease have very generally ultimately disappeared under its use, while the appetite of the patients has improved, and they have speedily exhibited an increase of strength and bulk. It is especially in the scrofulous affections of young subjects that the cod-liver oil had appeared to him to produce the greatest amount of benefit. He had not, however, seen any very striking amount of good result from its administration in cases in which tuberculous deposits had actually taken place in any of the tissues. In tubercular phthisis especially he had rarely, if ever, observed any positive benefit from its use. He had given it in many cases, and in large quantities, and though it had been taken perseveringly by the patients for a long period of time, he could not say that in a single instance the disease of the lungs had been arrested by it. The onward march of these cases towards a fatal termination appeared to him to be as rapid as those in which the oil had not been given. The wife of a gentleman connected with the public press, now under the care of Dr. C., had used it daily for the last three years, and she believes with very decided advantage. But though in her case the affection in the lungs is of a very chronic character, still the frequent attacks of hæmoptysis to which she is subject, and the physical signs revealed by auscultation, indicate, but too clearly, that her disease is making a slow but constant progress.

Dr. Wood said that he should not be doing justice to his own feelings were he not to seize this opportunity of communicating to the College the information on the subject under discussion he had derived from his recent experience. He felt himself the more strongly urged to make this communication from the fact that, in the last edition of his work on the Practice of Medicine, he had stated that the only effect he had observed from the use of cod-liver oil was the production of nausea. Now the reason of this he had ascertained was that he had not persevered sufficiently long with the use of the remedy. Subsequently he had employed it largely and perseveringly, in hospital as well as in private practice, and most assuredly he had never met with any one remedy or combination of remedies which had proved so efficacious as this in pulmonary phthisis. It is too soon, however, to say that in any case it will permanently cure the disease. He has certainly seen cases presenting, apparently, all the phenomena—the general symptoms as well as the physical signs—characteristic of phthisis, get well under its use. The patients have, at least, lost their cough and fever, their respiration has become natural, and they have acquired strength and flesh. In one case which occurred in the hospital, auscultation indicated the existence of a cavity at the summit of one lung, and deficient respiratory murmur in the other. The patient was pale, extremely feeble and emaciated, with hurried respiration, cough, and copious expectoration, hectic fever and night sweats. Although in this case Dr. W. expected little, even temporary, benefit to result from any plan of treatment, still he thought it his duty to place him under the use of the cod-liver oil. At the end of six or eight weeks, he was surprised to see the patient able to sit up, and considerably improved in all respects. From that time the unfavourable symptoms gradually lessened, the cough and expectoration abated, the respiration became more free and easy, the hectic fever and night sweats disappeared, the pulse increased in strength and diminished in frequency; and, at the termination of four months from the commencement of treatment, the patient had become fat, ruddy, strong, and, to all appearance, entirely well. Upon an examination of the chest, a deficiency of respiration was detected in the vicinity of that portion of the lung in which a cavity had existed—which is precisely what we should have anticipated. This is the most striking case which he has met with of the cure of pulmonary disease under the use of cod-liver oil.

The natural cure of tubercle is by the tuberculous matter becoming softened, and then discharged by expectoration. Now, if by any means we can so far modify the nutritive process as to prevent a further deposition of tuberculous matter, we may have a reasonable hope of a cure taking place in many cases of tubercular phthisis. We have the record of instances where this has actually taken place; the cicatrices of the discharged vomicæ being apparent, after death from other causes, many years subsequent to the disappearance of the symptoms indicative of phthisis.

In what had appeared to be the incipient stage of consumption, Dr. Wood had seen several very striking instances of the efficacy of cod-liver oil. In one case, that occurred in a child, he was convinced that there existed a cavity in one of the lungs. So far as the physical signs derived from auscultation were to be depended on, its presence appeared to be established. The patient was emaciated, had cough, impeded respiration, and hectic fever. Dr. Wood had some apprehension that it was a case of pulmonary tuberculosis. The child was put upon the use of cod-liver oil, with a proper diet and regimen, and at the end of six weeks the symptoms of disease had so far disappeared that the patient was considered convalescent. He ultimately recovered.

A middle-aged gentleman, who had suffered from repeated but slight attacks of hemorrhage from the lungs, became, subsequent to one of these attacks, emaciated and enfeebled in strength, with a frequent pulse and obstinate cough. Auscultation revealed no positive indications of pulmonary disease; but the general symptoms were such as to occasion much solicitude. Under the use of cod-liver oil, and at the termination of six weeks, he began to improve, and finally recovered.

In another case, that of a young man about twenty years old, the patient, who was convalescent from an attack of typhoid fever, became affected with cough, very frequent pulse, expectoration, fever, night sweats, and emaciation. Auscultation of the lungs evinced the probable existence of tuberculous deposition at the summit. Dr. W. considered this patient in imminent danger, unless he should be able to bring to bear upon his case influences more beneficial than those he had formerly had at his disposal. The patient was placed upon the use of cod-liver oil, with an appropriate diet and regimen; and was sent on a voyage to Europe. At the end of about six weeks he began to improve; and, on his return, at the end of three or four months, had lost all the symptoms of the disease, except frequent pulse, which gradually diminished under the continued use of the oil; and when Dr. Wood last saw him he was apparently in perfect health.

Here are three cases, in all of which he considered the symptoms under which the patients laboured to indicate disease of the lungs, of a very critical, and in one, almost hopeless, character. Under the use of cod-liver oil they all entirely recovered—so far at least as a disappearance of the morbid symptoms and a return of strength and vigour can indicate an entire recovery. He was not prepared to say that they were all instances of pulmonary tuberculosis—though there were strong reasons for believing that in most of them such was the case. They indicate, however, the very excellent effects to be derived from the oil in cases of a very troublesome and threatening character. It is important that the use of the remedy should be persevered in for a length of time. There is much, too, sold for cod-liver oil which contains little or none of the genuine article. If it has a strong taste and smell of boot-leather, it may be considered genuine.

Dr. Hays remarked that the communication just made by Dr. Wood was particularly valuable, and furnishes strong testimony in favour of cod-liver oil as a remedy in phthisis. His own experience of the effects of the article in that disease was but slight and by no means so favourable as that of Dr. W. In one case, however, the oil appeared to him to prove decidedly beneficial. It was that of a boy five years old, labouring under a violent cough, which resisted all the usual remedies. During a paroxysm of crying the patient was attacked with hemorrhage from the lungs, which recurred six times within ten days. In one of these attacks Dr. H. was assured that the child had discharged half a pint of blood.

The cough now became more constant and troublesome; the pulse rapid and feeble; there was expectoration of purulent matter, great restlessness, hectic fever, and excessive prostration. The child was put on the use of cod-liver oil, with a pectoral mixture to relieve the cough. The patient gradually acquired strength—the cough and expectoration diminished—the appetite returned, and health was finally restored. Since his recovery he has gone through an attack of pertussis without a recurrence of his pulmonary disease, and he now appears to be perfectly well.

Dr. H. has administered the cod-liver oil in cases of phthisis occurring in adults without any benefit—so far as the arrest of the disease was concerned—though he had no doubt the remedy even in these cases was often productive of good by its influence in improving nutrition.—*Ibid.*

Temporal Ridges of the African Cranium.—Dr. Neill exhibited to the College several skulls of different races, for the purpose of illustrating a point hitherto not observed by anatomical or ethnological writers.

In viewing the superior surface or norma verticalis of the African cranium, it will be found that the distance between the temporal ridges is so small, in comparison with that of other races, that it may be considered as a characteristic peculiarity.

By measurement, in thirty-three African heads, the smallest distance between the ridges averaged 4¼ inches; in twenty-nine Caucasian the same distance averaged 5⅔ inches.

The temporal fossa is larger in every respect in the African head.—*Ibid.*

Two Cases of Popliteal Aneurism successfully treated by Compression.—Dr. Jas. R. Wood, one of the surgeons to Bellevue Hospital, has recorded in the *New York Journal of Medicine* (May 1851) the two following cases of popliteal aneurism successfully treated by compression:—

Case 1.—John Morgan, aged thirty, born in Ireland, carpenter, admitted into Bellevue Hospital December 29th, 1849. He is temperate in his habits, and has enjoyed good health. While at work, twelve months ago, the scaffolding on which he was standing gave way, and fell to the ground, striking his left leg over the popliteal space on an upright piece of timber. Inflammation and swelling followed, and the part was very painful; under proper treatment these symptoms disappeared in eight or ten days, leaving a small hard tumour, which has since remained, slowly increasing in size. This tumour is the size of a small orange, is nearly globular in shape, and has a very firm feel. Strong pulsations can be felt when the fingers are placed over it; these pulsations are synchronous with those of the heart, and cease when compression is made on the femoral artery above it; at the same time the tumour diminishes somewhat in size. A faint aneurismal thrill can be heard at times by applying the ear to the part; this ceases with the pulsations. Pulsation and the thrill return, and the tumour regains its size as soon as pressure is removed. Slight pain is sometimes felt in the affected part.

Commenced treatment January 23, 1850, by compression, using alternately Dupuytren's instrument and the thumb. Patient was able to bear the compression twenty-five minutes the first application; second, thirty; third, thirty-five; the thumb being used in the intervals, which varied from ten minutes to half an hour. Very soon after the instrument was applied, the temperature of the limb fell two or three degrees, but in the course of three hours the natural heat was restored.

24th.—Compression has been constantly kept up since yesterday; patient is able to bear the instrument thirty minutes this morning without much pain; no pulsation felt in the tumour since half past 3 o'clock this morning; treatment is borne well; no outward symptom; pressure slightly moderated.

25th.—Treatment continued. Last night, at half past 11 o'clock, patient complained of pain in his back, and was very restless; pulse sixty-three per minute, and moderately full; tongue clean; functions regularly performed. Ordered sulph. morph. one-sixth of a grain, after which he was in a great measure relieved, and slept three hours; bears treatment much better than yesterday; instrument borne an hour without pain; no pulsation.

26th.—Treatment still continued; pressure moderated so as to be borne three hours without inconvenience; leg slightly swollen; still of natural temperature; a branch of one of the internal articular arteries can be felt pulsating on the inner side of the knee. This branch is enlarged, and is the size of or larger than the radial artery. No pulsation has been felt in the anterior or posterior tibial arteries since treatment was commenced.

27th.—No change of consequence since yesterday; slight compression borne six hours without pain. Leg not so much swollen as yesterday; small arterial branches can be felt pulsating on both sides of the tumour.

31st.—No change since last date of consequence; the tumour has sensibly diminished in size; collateral circulation appears to be growing stronger. The arterial branch inside the knee has increased in size somewhat; the instrument is still kept on to make slight compression.

Feb. 1st.—A graduated compress and roller bandage applied instead of the instrument. The roller was carried from the toes to the thigh. Patient allowed to walk a little.—*10th.* Compress and roller still kept on; tumour very much diminished in size. The veins of the affected leg are larger than those of the other side. There seems to be some obstruction to the return of blood above the knee. Patient allowed to walk around the ward, and back and forward in the hall adjoining. He has no pain, but says the knee-joint feels a little stiff, and that the foot feels numb sometimes. There is no pulsation yet felt in either of the tibial arteries.

20th.—All treatment discontinued except restriction in exercise; tumour nearly absorbed; a vestige merely remaining; veins still continue enlarged, but are not so much so as at last date. The sensation of numbness has almost entirely disappeared.

During the whole treatment the ordinary hospital diet has been allowed in moderate quantities. The appetite has been good; digestion and the other functions have been performed with perfect regularity.

I am indebted to my house-surgeon, Dr. Loving, and Dr. Loines, house-surgeon of the second surgical department, for their assistance in the treatment of this case.

Case II.—A—— B——, aged 38, N. Y., carman, intemperate, has had syphilis, for which he was treated with mercurials. He first noticed a small tumour behind the left knee, one month since, accompanied with slight pain, which he attributed to a violent jump. This did not trouble him much, and was almost forgotten, until at the end of the week, when, another leap, and a slip upon a round stone, were followed by great pain, and steady increase of the swelling, which compelled him to apply for medical relief; the case was readily recognised by his physician, Dr. Leveridge, but on account of the influence of his previous habits upon the nervous system, when he became confined to the house, treatment for the cure of the aneurism was delayed until this day, June 28th, 1850. The tumour is at present larger than a goose-egg, the pain is great, shooting down the leg at each pulsation, and constantly enhanced by the excessive œdema of the limb below the knee. General health, average; pulse, eighty-eight; respiration, twenty-four.

The plan of cure is, as in the case of Morgan, to interrupt entirely and constantly the primary current of blood to the aneurism, by the use of Dupuytren's compressor to the middle of thigh, alternating with pressure by the thumb to the artery, at the rami pubis. With this view, pressure by the instrument was first applied at 9 o'clock forty minutes, A. M., and continued thirty minutes, when, on account of the pain caused by it, the circulation was confined by the thumb at the rami pubis, and the pressure by the instrument taken off twenty minutes, after which it was reapplied, and the assistants so directed to make the alternation for the day; also, to aid the return of blood by friction with the hand, when pressure by the instrument should be taken off, and the patient rendered more comfortable by keeping the leg flexed.

In a few minutes after the circulation was thus cut off, the leg and foot became cold, but the heat soon returned to the upper part of the leg, and the superficial veins soon became enlarged, but gradually diminished in size. 9 P. M., same day. Pressure has been steadily kept up as directed, more than eleven hours, at about the same alternations; about five hours since, the patient suddenly complained of excruciating pain in the knee and leg for a few minutes; and in the course of an hour from that time, pulsation could be felt in one of the internal articular arteries. The tumour is now hard and incompressible, and, upon removing all pressure from the femoral artery, no pulsation can be perceived in it; notwithstanding this, pressure directed to be continued, with somewhat less severity, in the same manner during the night, the leg to be enveloped in cotton, and an anodyne administered.

June 29th.—10 A. M. Pressure has been steadily continued; patient showed some symptoms of mania à potu. There is no pulsation in the tumour, although it can be felt in the artery to within an inch of the aneurism; the leg is still cold; pressure continued.—*30th*, 9 A. M. Lighter pressure has been continued in the same way, and the patient now bears the instrument two hours at a time; the natural warmth has returned to the whole limb; anodynes are still administered at night; pressure to be continued.—*July 1st.* All going on well; œdema of the limb is subsiding, making the tumour more definable.—*2d.* Same note as yesterday; pressure is needed to be maintained so lightly, that the instrument is continued three or four hours in one place, and then a little up or down the thigh; the application of the thumb has not been needed since last night. —*4th.* All going on well; up to this time an assistant has remained constantly with the patient; but now it is considered unnecessary for the attendance of an assistant; no pulsation can be felt in the femoral artery below the tendinous arcade of the triceps.—*6th.* All going on well; the instrument is still kept on to confine the patient to the bed.

20th.—Absorption is going on in the tumour; the œdema is subsiding; patient is recovering the use of the limb, and he is allowed to sit up and move about on crutches. The whole limb is bandaged, and graduated compresses are applied along the course of the femoral artery. Pulsation can be felt in numerous small vessels around the knee; but it may be worthy of noting here that at no time since the patient has been under treatment could pulsation be detected in either of the tibial arteries.

Case of Amnesia.—Dr. THOMAS HUN, of Albany, records (*American Journal of Insanity*, April, 1851) the following interesting case of amnesia: "M'Nelly, a blacksmith, aged about thirty-five years, is a man of temperate habits, and of fair degree of intelligence. Before the present attack, he could read and write with facility. During the last eight years or longer, he has been labouring under a disease of the heart, which has caused repeated attacks of profuse hæmoptysis. At intervals he has been able to work at his trade.

"On the fourth of July last, he walked a great deal in the sun, and in the evening had symptoms of cerebral congestion. For several days, he remained in a state of stupor, from which he could be roused to take his drinks and medicines, but, when left to himself, relapsed into a state of unconsciousness. After a few days, he began to recover from this condition, and to understand what was said to him; but it was observed that he had great difficulty in expressing himself in words, and, for the most part, could make his wants known only by signs. There was no paralysis of the tongue; he moved it in all directions, and could utter a few words with distinctness. He knew the meaning of words spoken before him, but could not recall the words he needed to express himself, nor could he repeat the words when he heard them pronounced.

"He had the command over a few words, which he could recall and pronounce, and by means of which, together with signs, he endeavoured to make himself understood. He was conscious of the difficulty under which he was labouring, and seemed surprised and distressed by it. When he was endeavouring to express himself, if I pronounced the words he needed, he seemed pleased, and would say, 'Yes, that is it;' but was unable to repeat the word after me. If I pronounced it several times, he was still unable to repeat it, though he made great efforts to do so. He generally uttered words somewhat resembling those he was trying to pronounce. Thus far, his case resembled those mentioned by writers on the subject, but there was this peculiarity. After he had made fruitless efforts to repeat a word after me, I wrote it for him, and then he would begin to spell it letter by letter, and after a few trials was able to pronounce it. If the writing was now taken away from him, he could no longer pronounce the word, but, after long study of the written word, and frequent repetition, he could learn it so as to retain it, and afterwards use it. He kept a slate, on which the words he required most were written, and to this he referred when he wished to express himself. He gradually learned these words, and extended his vocabulary so that, after a time, he was able to dispense with his slate. He could read tolerably well from a printed book, but hesitated about some words.

"When he was unable to pronounce a word, he was also unable to write it, until he had seen it written, and then he could learn to write as he learned to pronounce, by repeated trials.

"It is now more than six months that he has been in this condition. His health is tolerable, with the exception of slight dyspnœa, and some œdema of the legs, depending on the disease of the heart. He is continually learning new words, and can now make himself understood pretty well, though he often hesitates for a word, and employs circumlocution when he cannot recall the proper word, somewhat as if he were speaking a foreign language, imperfectly learned. He can now readily repeat any word spoken before him, without seeing it written. His mind seems somewhat impaired, as we often see it in persons who have had an attack of apoplexy.

"I should have mentioned that he has not complained of pain in the head during his disease. I have repeatedly questioned him about pain in the frontal region, but his answers have always been in the negative."

American Medical Association.—The fourth annual meeting of this Association was held in Charleston, S. C., on the 6th, 7th, 8th, and 9th of May. About two hundred delegates were present, and the proceedings were as usual characterized by great cordiality and unanimity of sentiment. Every courtesy which the most elegant and liberal hospitality could devise was lavished upon the members of the Association by their brethren of the Palmetto State; and many warm friendships were formed, calculated to bind still closer in one brotherhood those who cultivate our science, and add to the power and influence of the Association.

Among the most important acts of the session was the abolition of the Standing Committees on "Medical Sciences," on "Practical Medicine," on "Surgery," on "Obstetrics," on "Medical Education," and on "Medical Literature," and the substitution for them of special committees to investigate and report on subjects of interest, and inviting voluntary communications by the offer of a prize of fifty dollars for any number of them not exceeding five, which shall be deemed worthy by a committee appointed for the purpose. This change in the organization of the Association is a most important one, and we think it is calculated to give a better direction, and to open a much wider field for the labours of the Association, and to greatly extend its usefulness. Such seemed also to be the sentiments of those who were present at the meeting, as it was advocated by every one who spoke on the occasion, and the resolutions were adopted, we believe, unanimously.

We fear, however, that the number of the special committees appointed (twenty-seven) was too large.

The reading of so many reports will extend the session for a longer period than the members will find it convenient to remain from home, and their publication involve an expenditure beyond the resources of the Association.

The following is a list of the chairmen of the special committees:—

1. Dr. D. F. Condie, of Philadelphia, Chairman to the Committee on the Causes of the Tubercular Diathesis.
2. Dr. S. H. Dickson, of Charleston, S. C., on the Blending and Conversion of the Types of Fever.
3. Dr. James Jones, of New Orleans, on the Mutual Relations of Yellow and Bilious Remittent Fever.
4. Dr. John B. Johnson, of St. Louis, Mo., on Epidemic Erysipelas.
5. Dr. Charles D. Meigs, of Philadelphia, Acute and Chronic Diseases of the Neck of the Uterus.
6. Dr. J. P. Jervey, of Charleston, S. C., on Dengue.
7. Dr. Daniel Drake, of Cincinnati, Milk Sickness, so called.
8. Dr. Lopez, Mobile, Ala., Endemic Prevalence of Tetanus.
9. Dr. George B. Wood, of Philadelphia, on Diseases of Parasitic Origin.
10. Dr. R. D. Arnold, Savannah, Ga., on the Physiological Peculiarities and Diseases of Negroes.
11. Dr. Horatio Adams, of Waltham, Mass., on the Action of Water on Lead Pipes, and the Diseases which proceed from it.
12. Dr. Joseph Carson, Philadelphia, on the Alkaloids which may be substituted for Quinia.
13. Dr. George Hayward, Boston, Mass., on the Permanent Cure of Reducible Hernia.
14. Dr. S. D. Gross, Louisville, Ky., on Results of Surgical Operations for the Relief of Malignant Diseases.
15. Dr. James R. Wood, New York, Statistics of the Operation for the Removal of Stone in the Bladder.
16. Dr. Charles A. Pope, St. Louis, Mo., Water, its Topical Uses in Surgery.
17. Dr. Alexander H. Stevens, New York, Sanitary Principles applicable to the Construction of Dwellings.
18. Dr. Porcher, Charleston, S. C., Toxicological and Medicinal Properties of our Cryptogamic Plants.
19. Dr. G. Emerson, Philadelphia, Agency of the Refrigeration produced through Upward Radiation of Heat as an Exciting Cause of Disease.
20. Dr. Worthington Hooker, Conn., on the Epidemics of New England and New York.

21. Dr. John L. Atlee, of Lancaster, Pa., on the Epidemics of New Jersey, Pennsylvania, Delaware, and Maryland.

22. Dr. Robert W. Haxall, Richmond, Va., on the Epidemics of Virginia and North Carolina.

23. Dr. William M. Boling, Montgomery, Ala., on the Epidemics of South Carolina, Georgia, Florida, and Alabama.

24. Dr. Edward H. Barton, Louisiana, on the Epidemics of Mississippi, Louisiana, Texas, and Arkansas.

25. Dr. Sutton, Georgetown, Ky., on the Epidemics of Tennessee and Kentucky.

26. Dr. Thomas Reyburn, Mo., on the Epidemics of Missouri, Illinois, Iowa, and Wisconsin.

27. Dr. George Mendenhall, Ohio, on the Epidemics of Ohio, Indiana, and Michigan.

The following gentlemen were appointed on the *Committee for Volunteer Communications*, viz.: Drs. George Hayward, J. B. S. Jackson, D. H. Storer, and Jacob Bigelow, of Boston; and Dr. Usher Parsons, of Providence, Rhode Island.

A full report of the proceedings will be found in the *Medical News* for June.

Pennsylvania State Medical Society.—This Society held its Third Annual Meeting in Philadelphia, on the 28th, 29th, and 30th of May. Seventy-six delegates were present, representing nineteen counties. Highly interesting reports were received from the Philadelphia, Berks, Chester, Huntingdon, Blair, Erie, and Mercer County Societies, prepared in compliance with a resolution adopted at the previous session, requesting county societies to furnish annually reports on the state of health, the medical topography, the occurrence and progress of contagious and epidemic disorders, within their respective limits, and such other medical intelligence as may be interesting to the State Society.

After reading the reports, and transacting other matters of business, a full report of which will be found in the *Medical News* for the present month, the Society adjourned, to meet in Philadelphia on the last Wednesday in May, 1852.

After the close of the session the delegates were entertained by the physicians of Philadelphia, at a supper at the Sansom St. Hall, on which occasion some excellent speeches were made, and the best feelings displayed.

Statistics of the Medical Colleges of the United States for the Session of 1850–51.

	No. of students.	No. of graduates.
Medical School of Maine	51	
Dartmouth Medical College, N. H.		
Medical College of Castleton, Vt.	153	64
Vermont Medical College		
Medical Department of Harvard University, Mass.		10
Berkshire Medical Institute		
Medical Institute of Yale College	38	11
Med. Dep. Univ. State of New York, (Coll. Phys. and Surg.)	230	63
Medical Department Univ. City of New York	411	116
Albany Medical College	92	24
Geneva Medical College	101	
Med. Dep. University of Buffalo, N. Y.	115	30
Medical Department, University of Pennsylvania	466	167
Jefferson Medical College	504	225
Med. Dep. of Pennsylvania College		36
Philadelphia College of Medicine (two sessions)	244	72
Medical Department, University of Maryland		45
Med. Dep. of Washington University, Md.		13
Med. Dep. Columbian College, D. C.		
Med. Dep. University of Virginia	93	26
Med. Dep. of Hampden Sydney College, Va.	90	26
Winchester Medical College, Va.		
Medical College of State of South Carolina	229	65

	No. of students.	No. of graduates.
Medical College of Georgia	159	50
Med. Dep. University of Louisiana		37
Memphis Medical College		
Medical Department of Transylvania University		
Med. Dep. University of Louisville	282	81
Medical College of Ohio	186	58
Starling Medical College, Ohio	125	35
Med. Dep. Western Reserve College, Cleaveland	202	60
Indiana Medical College		
Indiana Central Medical College		
Rush Medical College	132	30
College of Physicians and Surgeons of the Iowa University		10
Med. Dep. Univ. State of Missouri		33
Med. Dep. St. Louis University		19
Madison Medical College, Wis.		
New York Medical College	60	12
University of Michigan	9	7

GRADUATES OF THE UNIVERSITY OF PENNSYLVANIA,

APRIL, 1851.

At a Public Commencement, held April 5th, 1851, in the Musical Fund Hall, Locust Street, the degree of DOCTOR OF MEDICINE was conferred by the Rev. JOHN LUDLOW, D. D., Provost, upon the following gentlemen; after which an Address was delivered by WILLIAM E. HORNER, M. D., Professor of Anatomy.

NAME.	RESIDENCE.			ESSAY.
Abernathy, C. Clayton	Pulaski,	Giles,	Tenn.,	Marsh Miasm.
Albright, Francis G.	Churchtown,	Lancaster,	Pa.,	Enteric Fever.
Alstadt, Alfred L.	Marietta,	Lancaster,	Pa.,	Physical Effects of Heat and Cold.
Aymé, Henry	La Rochelle,	Charente Inf.,	France,	Physiology of Blood.
Baily, George	Philadelphia,		Pa.,	Fractures.
Baldwin, Robert F.	Winchester,	Frederick,	Va.,	Dyspepsia.
Banks, Edward G.	Clinton,	Hinds,	Miss.,	Pernicious Fever.
Barbee, Andrew R. Jr.	Luray,	Page,	Va.,	Pelvic vel Podalic Version.
Battle, James P.	Rocky Mount,	Edgecombe,	N. C.,	Necessity of Enlightened Medical Education.
Beall, Adam J.	Hamilton,	Harris,	Ga.,	Induction of Premature Labour.
Beaumont, Charles W.	Clarksville,	Montgomery,	Tenn.,	Consecutive Cardiac and Pulmonary Diseases.
Birkey, Thomas W.	Philadelphia,		Pa.,	Scarlatina.
Bizzell, James A.	Clinton,	Sampson,	N. C.,	Relation of the Red Blood Corpuscles, &c.
Blaker, Gilbert H.	Abington,	Montgomery,	Pa.,	Etiology and Pathology of Fever.
Blandy, Thomas R.	Newark,	New Castle,	Del.,	Mercury.
Brice, Walter	Youngsville,	Fairchild,	S. C.,	Human Blood.
Brickhouse, Wm. E.	Franktown,	Northampton,	Va.,	Pneumonia.
Brinley, Putnam	Hartford,	Hartford,	Conn.,	Irritable Uterus.
Brown, Hugh	Amherst C. H.	Amherst,	Va.,	Puerperal Fever.
Brown, James W.	Framingham,	Middlesex,	Mass.,	Animal Heat.
Brown, William C.	Yanceyville,	Caswell,	N. C.,	Pneumonia.
Browning, John S.	Washington,	Rappahannock,	Va.,	Remittent Fever.
Brownson, Robert S.	Mercersburg,	Franklin,	Pa.,	Hemorrhoids.
Buck, Horace R.	Vicksburg,	Warren,	Miss.,	Spinal Irritation.
Buford, John	Pulaski,	Giles,	Tenn.,	Etherization.
Bull, John F.	Sandy Hook,	Harford,	Md.,	Cerated glass of Antimony.

NAME.	RESIDENCE.			ESSAY.
Cabell, Henry L.	Winchester,	Frederick,	Va.,	Enteric Fever.
Catlett, George C.		Christian,	Ky.,	Febris Puerpera.
Christy, John T.	Hollidaysburg,	Blair,	Pa.,	Enteric Fever.
Clanton, William H.	Warsaw,	Sumpter,	Ala.,	Scarlatina.
Clardy, John D.	Longview,	Christian,	Ky.,	Diagnosis and Treatment of Enteric Fever.
Conway, William A.	St. James Parish,		La.,	Acute Dysentery of Tropical climates.
Corse, James M.	Philadelphia,		Pa.,	Abortion and Sterility.
Corson, Thomas J.	New Hope,	Bucks,	Pa.,	Health *versus* Fashion.
Cox, J. Barton	New Orleans,		La.,	Pneumonia.
Craig, B. Faneuil	Philadelphia,		Pa.,	Phenomena of Human Vision.
Crane, T. Chandler	Truro,	Colchester,	N. Scotia,	Nausea Marina.
Crowel, Elisha	West Philad'a,		Pa.,	Inflammation.
Cummings, John C.	Clinton,	Anderson,	Tenn.,	Medical Reform.
Cushing, Henry K.	Cleveland,	Cuyahoga,	Ohio,	Animal Chemistry.
Daniel, Richard P.	Jacksonville,	Duval,	Fla.,	Dengue as it appeared in Jacksonville in 1850.
Davis, William J.	Bayou Sara,	W. Feliciana,	La.,	Fœtal Circulation.
Denny, William H.	Ellicott's Mills,		Md.,	
Detwiler, Daniel D.	Trappe,	Montgomery,	Pa.,	Physiology of Digestion.
Dicken, Kenelm H.	Scotland Neck,	Halifax,	N. C.,	Opium: Its effects on the System.
Dillon, Robert F.	Zanesville,	Muskingum,	Ohio,	Demonstrative Midwifery.
Dixon, Richard H.	Cambridge,	Dorchester,	Md.,	Intermittent Fever.
Dominique, John	Donaldsonville,	Ascension,	La.,	Pathologie du Fœtus pendant la vie intra-utérine.
Durney, Robert A.	Montgom'ville,	Montgomery,	Pa.,	Scarlatina.
Dye, David M.	Lewisburg,	Union,	Pa.,	Secale Cornutum.
Eborn, William B.	Greenville,	Pitt,	N. C.,	Erysipelas.
Erskine, Albert R.	Huntsville,	Madison,	Ala.,	Hernia.
Evans, David J.	Morgantown,	Berks,	Pa.,	Secale Cornutum as a Parturient agent.
Faulcon, Robert T.	Halifax,	Halifax,	N. C.,	Icterus.
Fish, Augustine H.	Trenton,	Mercer,	N. J.,	Delirium Tremens.
Flanner, Thomas U.	Mt. Pleasant,	Jefferson,	Ohio,	Tuberculosis.
Fleming, William J.	Philadelphia,		Pa.,	Compound Fracture.
Folkes, Miles W.	Vicksburg,	Warren,	Miss.,	Epidemic Cholera.
Gallaway, Robert	Eagle Falls,	Rockingham,	N. C.,	Hæmoptysis.
Gebhard, Lewis H.	Philadelphia,		Pa.,	Strictures of Urethra.
Gilliam, Theophilus F.	Petersburg,	Dinwiddie,	Va.,	Pneumonia.
Goff, Thomas J.	Columbia,	Maury,	Tenn.,	Gun-shot Wounds.
Graves, George O.	Paris,	Bourbon,	Ky.,	Organic Heat.
Gray, William B.	Hernando,	De Soto,	Miss.,	Epidemic Cholera.
Green, James S., Jr.	Philadelphia,		Pa.,	Ergota.
Green, Francis V.	Philadelphia,		Pa.,	Diseases of the Heart.
Gullett, Thomas F.	Aberdeen,	Monroe,	Miss.,	Hemorrhagic Diathesis.
Hagner, D. R.	Washington,		D. C.,	The Eye and its Functions.
Hammond, George W.	Fincastle,	Botetourt,	Va.,	Enteric Fever.
Harrison, Randolph	Cartersville,	Cumberland,	Va.,	Pericarditis.
Harrison, Virginius W.	Garysville,	Prince George,	Va.,	Hepatitis.
Hart, Harry C.	Philadelphia,		Pa.,	Lithiasis.
Harvey, John, Jr.	Newberne,	Craven,	N. C.,	Ether.
Henderson, Francis M.	Salisbury,	Rowan,	N. C.,	Hysteralgia.
Henry, Thomas G.	Hopkinsville,	Christian,	Ky.,	Bilious Fever.

NAME.	RESIDENCE.			ESSAY.
Herring, James B.	Lewistown,	Mifflin,	Pa.,	Empiricism.
Hicks, James W.	Oxford,	Granville,	N. C.,	Phthisis Africana.
Hicks, John T.	Fish Dam,	Wake,	N. C.	Etiology of Miasmatic Fevers.
Hodge, Ambrose W.	Decatur,	Meigs,	Tenn.,	Study of Medicine.
Hodges, Jas. Gregory	Portsmouth,	Norfolk,	Va.,	Acute Peritonitis.
Horner, Frederick, Jr.	Warrenton,	Fauquier,	Va.,	Enteric Fever.
Jackson, Cartwright C.	E. City,	Pasquotank,	N. C.,	Enteric Fever.
Jackson, Thomas J.	Liberty,	Amite,	Miss.,	Intermittent Fever.
Jones, Lafayette	Henderson,	Henderson,	Ky.,	Pneumonia.
Jones, Zebedee R.	Philadelphia,		Pa.,	Menstruation.
Kennedy, William	Belvidere,	Warren,	N. J.,	Amenorrhœa.
Kennedy, William E.	Chattanooga,	Hamilton,	Tenn.,	Medical Etiquette.
Kieffer, Stephen B.	Mercersburg,	Franklin,	Pa.,	Science of Prescription.
Lane, William C.	Chambersburg,	Franklin,	Pa.,	Dignity of Medicine.
Lassiter, Daniel W.	Petersburg,	Dinwiddie,	Va.,	Inguinal Hernia.
Lichtenthaler, Henry A.	New Berlin,	Union,	Pa.,	Dysentery.
Little, Benjamin Rush	Mercersburg,	Franklin,	Pa.,	Nervous System as a source of Funct. and Org. Disease.
Logan, Thomas H.	Washington,	Washington,	Pa.,	Sunlight.
Maiben, Frank	Claiborne,	Monroe,	Ala.,	Remittent Fever.
Mayo, Edward C.	Cartersville,	Cumberland,	Va.,	Gonorrhœa.
Molony, Alvah J.	Norristown,	Montgomery,	Pa.,	Puerperal Fever.
Moss, Andrew W.	Lewistown,	Mifflin,	Pa.,	Water.
Mowrer, Peter A.	East Vincent,	Chester,	Pa.,	Nitrogen Gas.
M'Cain, John S.	Greenwood,	Carrol,	Miss.,	Mutual dependence of the Heart and Lungs.
M'Combs, William H.	Nashville,	Davidson,	Tenn.,	Inflammation of the Os and Cervix Uteri.
M'Gowan, William D.	Ligonier,	Westmoreland,	Pa.,	Cold as a Therapeutic Agent.
Newcomer, Frisby S.	Chambersburg,	Franklin,	Pa.,	Origin of Medicine, &c.
Nuckolls, Robert N.	Tuskegee,	Macon,	Ala.,	Physometra.
Otis, George A., Jr.	Richmond,	Henrico,	Va.,	Eccentric Hypertrophy of the Heart.
Parke, J. Siter	Downingtown,	Chester,	Pa.,	Cod-liver Oil.
Pettit, William	Philadelphia,		Pa.,	Climate of Lake Superior and its effects on Pulm. Diseases.
Pool, William G.	Elizabeth City,	Pasquotank,	N. C.,	Phthisis.
Porter, Charles C.	Calais,	Washington,	Me.,	Asthma.
Porter, George W.	Philadelphia,		Pa.,	Menstruation.
Potter, Thomas B.	Bellefonte,	Centre,	Pa.,	Enteric Fever.
Potts, Richard	Frederick,	Frederick,	Md.,	Vis Medicatrix Naturæ.
Powell, Sidner A.	Milton,	Caswell,	N. C.,	Acidum Arseniosum.
Provan, Mathew P.	Bayou Sara,	West Feliciana,	La.,	Physiological effects of Digitalis.
Quick, Jacob	N. Brunswick,	Somerset,	N. J.,	Dysentery.
Raney, George M.	Petersburg,	Prince George,	Va.,	Pericarditis.
Randolph, Peter	Bayou Sara,	W. Feliciana,	La.,	Gastritis.
Randolph, Thomas G.	Hopkinsville,	Christian,	Ky.,	Pulmonary Consumption.
Reynolds, D. Elliott	Mercersburg,	Franklin,	Pa.,	Anæsthesia.
Rhoads, James E.	Philadelphia,		Pa.,	Puerperal Insanity.
Richards, Charles H.	Georgetown,	Sussex,	Del.,	Bilious Remittent Fever.
Richmond. Stephen T.	Leasburg,	Caswell,	N. C.,	Scarlatina.
Robertson, Wm. H., Jr.	Winterpock,	Amelia,	Va.,	Concussion and Compression of Brain.

NAME.	RESIDENCE.			ESSAY.
Robinett, G. Herman	Philadelphia,		Pa.,	The Urine.
Rowan, A. James	Natchez,	Adams,	Miss.,	Therapeutical Application of Opium.
Sanders, Richard W.	Jackson's Ferry,	Wythe,	Va.,	Phlegmasia Dolens.
Scales, John R.	Triune,	Williamson,	Tenn.,	Food.
Scholl, Alfred K.	Philadelphia,		Pa.,	Medical Abstractions.
Selser, Isaac M.	Vicksburg,	Warren,	Miss.,	Inflammation.
Sharpe, Thomas S.	Maysville,	Mason,	Ky.,	Endocarditis.
Sherrod, John W.	Hamilton,	Martin,	N. C.,	Colo-rectitis.
Shipp, George P.	Natchez,	Adams,	Miss.,	Dysentery.
Smith, Caswell L.	Clinton,	E. Feliciana,	La.,	Enteric Fever.
Smith, Charles G.	Exeter,	Rockingham,	N. H.,	Diabetes.
Smith, Columbus D.	Newman,	Coweta,	Ga.,	Management of Pregnancy.
Smith, Edward A.	Worcester,	Worcester,	Mass.,	Diseases of Insanity.
Soule, Nicholas E.	Exeter,	Rockingham,	N. H.,	Scarlatina.
Stanfield, Josiah A.	Leasburg,	Caswell,	N. C.,	Merocele.
Stidham, Joseph P.	Wilmington,		Del.,	Hepatic Phthisis.
Stillé, Albert Owen	Philadelphia,		Pa.,	Urea.
Tilden, Edwin M.	Denton,	Caroline,	Md.,	Peritonitis.
Tolson, Thomas T.	Stanford,	Lincoln,	Ky.,	Inflammation.
Tryon, Percival J.	Rehrersburg,	Berks,	Pa.,	Fracture of Skull, &c.
Turner, James H.	Front Royal,	Warren,	Va.,	Miasma.
Turney, Samuel D.	Circleville,	Pickaway,	Ohio,	Ascites.
Upshur, Thomas W.	Norfolk,		Va.,	Gun-shot Wounds.
Vogdes, Edward W.	Philadelphia,		Pa.,	Practical Pharmacy.
Wall, Thos. W.	Winchester,		Va.,	Ophthalm. Neonatorum.
Waller, Obadiah	Nashville,	Davidson,	Tenn.	Diagnosis and Treatment of Typhus and Typhoid Fevers.
Wanner, Charles H.	Kutztown,	Berks,	Pa.,	Enteric Fever.
Ware, James T.	Yanceyville,	Caswell,	N. C.,	Idiopathic Erysipelas.
Watters, John Henry	Bel-Air,	Harford,	Md.,	Germ Force.
White, Coleman	Wilton,	Granville,	N. C.,	Pneumonia.
White, Wm. Andrew	Bent Creek,	Appomattox,	Va.,	Asphyxia.
Whitehill, James C.	Marietta,	Lancaster,	Pa.,	Cinchonia as a Tonic and Antiperiodic.
Williams, William J.	Barboursville,	Orange,	Va.,	Epilepsy.
Williamson, James	Portsmouth,	Norfolk,	Va.,	Lobular Pneumonia.
Wilson, Augustus	St. Jago de Cuba,		Cuba,	Yellow Fever.
Wilson, James S.	M'Veytown,	Mifflin,	Pa.,	Effects of Habit.
Wiseman, James W.	Lexington,	Davidson,	N. C.,	Menstrual Secretion.
Wishart, J. Wilson	Washington,	Washington,	Pa.,	Animal Temperature.
Wright, A. Wesley	Philadelphia,		Pa.,	Absorption of the Placenta.

At a Public Commencement, held July 3d, 1850, the Degree of Doctor of Medicine was conferred on the following gentlemen.

NAME.	STATE.	ESSAY.
Burwell, John D.	Virginia,	Variola.
Denison, James H.	Nova Scotia,	Acute Gastritis.
Johnson, Mayhew	New Jersey,	Puerperal Peritonitis.
M'Cree, Cruser A.	North Carolina,	Acute Gastritis.
M'Eachin, Charles	Alabama,	Fractures.
Wiggins, Blake W.	North Carolina,	Intermittent Fever, &c.

Total, 167.

UNIVERSITY OF PENNSYLVANIA, MEDICAL DEPARTMENT.

EIGHTY-SIXTH SESSION, 1851-52.

The Lectures will commence on Monday, October the 6th, and terminate about the end of March ensuing.

Theory and Practice of Medicine, - - - -	By George B. Wood, M.D.
Anatomy, - - - - - - - - - -	" William E. Horner, M.D.
Materia Medica and Pharmacy, - - - - -	" Joseph Carson, M.D.
Chemistry, - - - - - - - - - -	" James B. Rogers, M.D.
Surgery, - - - - - - - - - -	" William Gibson, M.D.
Obstetrics and the Diseases of Women and Children,	" Hugh L. Hodge, M.D.
Institutes of Medicine, - - - - - -	" Samuel Jackson, M.D.

Clinical Instruction at the Pennsylvania Hospital, by Geo. B. Wood, M. D., and by Geo. W. Norris, M. D.

Demonstrative Instruction in Medicine and Surgery by the Professors of the Medical Faculty, assisted by W. W. Gerhard, M.D., and Henry H. Smith, M.D.

Practical Anatomy, by John Neill, M.D., Demonstrator.

Amount of Fees for Lectures in the University, - - - - - -	$105
Matriculating Fee (paid once only), - - - - - - - - -	5
Hospital Fee, - - - - - - - - - - - - - -	10
Practical Anatomy, - - - - - - - - - - - - -	10
Graduating Fee, - - - - - - - - - - - - - -	30

W. E. HORNER, M.D., *Dean of the Medical Faculty,*

June 15, 1851. 386 *Chestnut Street, above Thirteenth, opposite U. S. Mint, Philad.*

MEDICAL DEPARTMENT OF HAMPDEN SIDNEY COLLEGE,

RICHMOND, VA.

The fourteenth annual course of Lectures will be commenced on Monday, the 13th of October, 1851, and continue until the 1st of the ensuing March. The Commencement for conferring degrees will be held about the middle of March.

R. L. Bohannan, M. D., Prof. of Obstetrics and Diseases of Women and Children.
L. W. Chamberlayne, M. D., Professor of Materia Medica and Therapeutics.
S. Maupin, M. D., Professor of Chemistry and Pharmacy.
Charles Bell Gibson, M. D., Professor of Surgery and Surgical Anatomy.
Carter P. Johnson, M. D., Professor of Anatomy and Physiology.
David H. Tucker, M. D., Professor of Theory and Practice of Medicine.
Arthur E. Peticolas, M. D., Demonstrator of Anatomy.

The study of Practical Anatomy may be prosecuted with the most ample facilities, and at very trifling expense.

Clinical lectures are regularly given at the College Infirmary, and Richmond Almshouse. The Infirmary, under the same roof with the College, and subject to the entire control of the Faculty, is at all times well filled with medical and surgical cases, and furnishes peculiar facilities for clinical instruction. Many surgical operations are performed in presence of the class; and the students being freely admitted to the wards, enjoy, under the guidance of the Professors, unusual opportunities for becoming familiar with the symptoms, diagnosis, and treatment of disease.

EXPENSES.—Matriculation fee $5; Professors' fees $105; Demonstrator's fee $10; Graduation fee $25.

The price of Board, including fuel, lights, and servants' attendance, is usually $3 or $3 50 per week.

The catalogue, &c., containing fuller information concerning the institution, will be forwarded to those applying for it, or specific inquiries will be answered by letter.

Address S. MAUPIN, M. D., *Dean of the Faculty.*

JEFFERSON MEDICAL COLLEGE.

Session of 1851–52.

The regular Course of Lectures will commence on Monday, the 13th of October, and continue until the first day of March. The Annual Commencement for conferring degrees will be held *early in March*, instead of at the end of the month, as formerly.

Robley Dunglison, M. D., Prof. of Institutes of Medicine, &c.
Robert M. Huston, M. D., Prof. of Materia Medica and General Therapeutics.
Joseph Pancoast, M. D., Prof. of General, Descriptive, and Surgical Anatomy.
John K. Mitchell, M. D., Prof. of Practice of Medicine.
Thomas D. Mütter, M. D., Prof. of Institutes and Practice of Surgery.
Charles D. Meigs, M. D., Prof. of Obstetrics and Diseases of Women and Children.
Franklin Bache, M. D., Prof. of Chemistry.
Ellerslie Wallace, M. D., Demonstrator of Anatomy.

Every Wednesday and Saturday in the month of October, and during the Course, Medical and Surgical cases will be investigated, prescribed for, and lectured on before the class. During the past year, *nineteen hundred and seventy-nine* cases were treated, and *two hundred and seventy-three* operations performed. Amongst these were many major operations—as lithotomy, amputation of the leg, arm, &c., extirpation of the eye and mamma, trephining, extensive plastic operations, resection of the femur for ankylosis, &c. &c.

The Lectures are so arranged as to permit the student to attend the Lectures and Clinical demonstrations at the Pennsylvania Hospital.

On and after the 1st of October, the dissecting-rooms will be open, under the direction of the Professor of Anatomy and the Demonstrator.

FEES.

Matriculation, which is paid only once,	$5 00
Each Professor, $15,	105 00
Graduation,	30 00

The number of Students during the last session was 504; and of Graduates 227.

R. M. HUSTON, M. D.,
July, 1851. *Dean of the Faculty*, No. 1 Girard Street.

MASSACHUSETTS MEDICAL COLLEGE.

The Medical Lectures of Harvard University will commence at the Massachusetts Medical College in Boston, on the first Wednesday in November, and continue four months.

Obstetrics and Medical Jurisprudence by	Walter Channing, M. D.
Materia Medica and Clinical Medicine by	Jacob Bigelow, M. D.
Theory and Practice of Medicine by	John Ware, M. D.
Pathological Anatomy by	John B. S. Jackson, M. D.
Anatomy and Physiology by	Oliver W. Holmes, M. D.
Principles and Operations of Surgery by	Henry J. Bigelow, M. D.
Chemistry by	J. P. Cooke, A. M.

Clinical Lectures are delivered at the Massachusetts General Hospital three times a week by the Professors of Clinical Medicine and of Surgery. Surgical operations are very numerous, performed weekly in the presence of the class in the operating theatre. The safe and effectual practice of etherization, a discovery first made in Boston, and matured and established in the Massachusetts General Hospital, is practically taught in this School.

Practical Anatomy is amply provided for by the most liberal arrangements. The anatomical museum is one of the largest and richest in the United States, and has a fund of $5,000 for its increase. The Eye and Ear Infirmary, and other charities, are open to students.

The professors of Pathological Anatomy, of Surgery, and of Chemistry, are now pursuing their medical inquiries in Europe, but are expected to return in season to be present at the opening of the coming course.

Fees for the whole Course, $80. Matriculation, $3. Dissecting Ticket, $5. Graduation, $20. Hospital and Library gratuitous.

The Tremont Street School for private pupils, having all the advantages of the Hospital, Dissecting-Room, and of daily recitations throughout the year on the branches of medical science, is conducted by Drs. Bigelow, Storer, Jackson, Holmes, and H. J. Bigelow, four of whom are Physicians and Surgeons of the Hospital.

MEDICAL DEPARTMENT OF PENNSYLVANIA COLLEGE.

Ninth, below Locust Street, Philadelphia.—Session 1851-52.

The annual course of Lectures will commence on Monday, October 13th, and continue until the 1st of March ensuing.

FACULTY.

Principles and Practice of Medicine,	William Darrach, M.D.
Obstetrics and the Diseases of Women and Children,	John Wiltbank, M. D.
Materia Medica and Pharmacy,	Henry S. Patterson, M.D.
Anatomy and Physiology,	William R. Grant, M. D.
Principles and Practice of Surgery,	David Gilbert, M.D.
Medical Chemistry,	Washington L. Atlee, M. D.
Demonstrator of Anatomy,	W. H. Gobrecht, M.D.

There is a Medical and Surgical Clinic on every Wednesday and Saturday. Second course students will be furnished with tickets to the Medical and Surgical Clinic of the Pennsylvania Hospital *free of expense.*

FEES.

Matriculation (paid once only),	$5
For each ticket,	15
Graduation,	30

The Hall of Practical Anatomy will be open on the 1st of October.

For further particulars, address

DAVID GILBERT, M.D., *Registrar,*
124 Arch Street.

UNIVERSITY OF THE STATE OF MISSOURI,
MEDICAL DEPARTMENT.

Joseph N. McDowell, M. D., Professor of the Principles and Practice of Surgery, and of Clinical Surgery.

Richard F. Barret, M.D., Professor of Physiology and Materia Medica.

John B. Johnson, M. D., Professor of Clinical Medicine, and of Pathological Anatomy.

Abner Hopton, M. D., Professor of Chemistry and of Medical Jurisprudence.

S. Gratz Moses, M. D., Professor of Obstetrics and the Diseases of Women and Children.

Joseph N. McDowell, M. D., Professor of General, Descriptive, and Surgical Anatomy.

John S. Moore, M. D., Professor of the Principles and Practice of Medicine.

John Hodgen, M. D., Adjunct Professor of Surgery, and Demonstrator of Anatomy.

L. T. Pim, M. D., Adjunct Professor of Anatomy, and Prosector.

Peter Mason, *Curator.* Henry Williams, *Janitor.*

The twelfth session of this University opens on the 16th of October. Aggregate cost of tickets, $105. Matriculation fee, $5. Graduation fee, $20. Good boarding, from $2 to $3. For further information, address the Dean of the Faculty, or call upon him at his office, No. 44 Fourth Street, under the Planters' House.

St. Louis. JOHN S. MOORE, M. D., *Dean.*

UNIVERSITY OF LOUISVILLE—MEDICAL DEPARTMENT.

SESSION OF 1851-52.

The regular Course of Lectures will commence on the first day of November, and be continued, under the following arrangement, to the end of February ensuing.

Jedediah Cobb, M. D., Professor of Anatomy.

Lunsford P. Yandell, M. D., Professor of Physiology and Pathological Anatomy.

Samuel D. Gross, M. D., Professor of Surgery.

Henry Miller, M. D., Professor of Obstetric Medicine.

Lewis Rogers, M. D., Professor of Materia Medica and Therapeutics.

Benjamin Silliman, Jr., M. D., Professor of Chemistry and Toxicology.

Daniel Drake, M. D., Professor of the Theory and Practice of Medicine.

Tobias G. Richardson, M. D., Demonstrator of Anatomy.

Anatomical rooms open on the 1st of October.

Clinical instruction at the Marine Hospital, and cases also prescribed for and lectured on before the class, at the College, during the winter.

FEES.—For the whole course, collectively, $105. Matriculation ticket, $5. Dissecting ticket, $5. Hospital ticket, $5. Graduation fee, $5.

J. COBB, M. D., *Dean of the Medical Faculty.*

NEW YORK UNIVERSITY,

MEDICAL DEPARTMENT.

The Faculty of the New York University, in announcing their ensuing course of lectures, take great pleasure in stating that their large classes have rendered it necessary for them to erect a new Medical edifice. They have purchased a most eligible and spacious site in Fourteenth Street, near Union Square, on the centre of which, their Medical edifice is now in the course of erection, and will be completed by the 10th of September next. The building will consist of three capacious lecture-rooms, each capable of containing from five to six hundred persons, Museums, Dissecting-rooms, &c. &c. The Anatomical lecture-room will be lighted by a dome 40 feet in height. In a word, no expense nor labour has been spared to make this edifice—in point of comfort and convenience—all that could be desired by the friends of the Institution.

The Faculty are most happy to state that they have been enabled to appoint to the chairs of Surgery and Practice—made vacant as heretofore announced—two gentlemen of pre-eminent character, and they sincerely congratulate the friends of the University throughout the country on the increased strength which these appointments will give the Institution. Dr. Alfred C. Post, the Professor of Surgery, is an able and experienced surgeon, and his connection with the New York Hospital will afford additional facilities to the students of the University. Dr. Post is extensively engaged in surgical practice in the city of New York, and will bring to his chair a ripe experience. Dr. Meredith Clymer, the Professor of the Institutes and Practice, is a gentleman well known to the profession, both by his writings and connection with the Virginia and Philadelphia medical schools. He has also been for many years Professor of Clinical Medicine in the Philadelphia Hospital.

SESSION 1851–52.

The Lectures will commence on Monday, the 20th day of October, and be continued under the following arrangement until the last day of February.

Granville Sharpe Pattison, M. D., Prof. of General, Descriptive, and Surgical Anatomy.

Martyn Paine, M. D., Prof. of Materia Medica and Therapeutics.

Gunning S. Bedford, M. D., Prof. of Midwifery and the Diseases of Women and Children.

John W. Draper, M. D., Prof. of Chemistry and Physiology.

Alfred C. Post, M. D., Prof. of Principles and Operations of Surgery, with Surgical and Pathological Anatomy.

Meredith Clymer, M. D., Prof. of the Institutes and Practice of Medicine.

William Darling, M. D., Demonstrator of Anatomy.

George A. Peters, A. M., M. D., Prosector to the Professor of Surgery.

In order to afford ample opportunity to their pupils of studying disease practically, the faculty have organized three weekly cliniques, held in the College building.

1. A Surgical Clinique every Saturday, by Prof. Post.
2. A Medical Clinique every Wednesday, by Prof. Clymer.

3d. An Obstetric Clinique every Monday, by Professor Bedford. The most interesting diseases of women and children will be presented to the class, and fully lectured on by the Professor. The class will also have an abundant supply of Midwifery cases, to be attended at the houses of the patients. For these cliniques, no extra charge will be made.

In addition to these means of studying disease, the New York Hospital, the Bellevue Hospital, the Eye and Ear Infirmary, the various Dispensaries and Infirmaries are all accessible to the students.

Clinical Instruction is given every day at the New York Hospital, of which Prof. Post is one of the attending surgeons.

The Dissecting-Room will be open on the first day of October, and an ample supply of the material furnished. Students who pursue dissection, will be examined daily on Anatomy by the Demonstrator.

Fee for the full Course of Lectures, $105. Matriculation fee, $5. Practical Anatomy, $5. Graduation fee, $30.

The Spring commencement will take place early in March, and the Summer commencement early in July.

Good board can be obtained for $3 per week.

Students, on arriving in the city, will please call at the College Building, in Fourteenth Street, near Union Square, and inquire for the Janitor, Mr. Polman, who will conduct them to boarding-houses near the College.

JOHN W. DRAPER, M. D., *President of the Medical Faculty.*

P. S. Students who arrive in the city *before* the 1st of October, will please call at the former College Building, 659 Broadway, where they will find a person ready to conduct them to the new edifice.

COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

The Forty-fifth Session of this Institution will commence on Monday, October 13th, and close March 11th, 1852. The preliminary course begins September 29th, and continues two weeks.

FACULTY.

Alexander H. Stevens, M. D., LL.D., President, and Emeritus Professor of Surgery.

Valentine Mott, M. D., Emeritus Professor of Operative Surgery and Surgical Anatomy.

Joseph M. Smith, M. D., Professor of the Theory and Practice of Medicine and Clinical Medicine.

John Torrey, M. D., LL.D., Professor of Chemistry and Botany.

Robert Watts, M. D., Professor of Anatomy.

Willard Parker, M. D., Professor of Surgery.

Chandler R. Gilman, M. D., Professor of Obstetrics and the Diseases of Women and Children.

Alonzo Clark, M. D., Professor of Physiology and Pathology.

Elisha Bartlett, M. D., Lecturer on Materia Medica and Medical Jurisprudence.

Charles A. Isaacs, M. D., Demonstrator.

Lewis A. Sayre, M. D., Prosector of Surgery.

FEES.

Matriculation,	$5
Graduation,	25
Full Course of Lectures by all the Professors,	105

R. WATTS, M.D., *Dean.*

NEW YORK MEDICAL COLLEGE.

The next Annual Course of Lectures in the New York Medical College, will commence on Monday, the 20th of October, 1851, and continue five months.

Horace Green, M. D., President of the Faculty, and Professor of the Theory and Practice of Medicine.

John H. Whittaker, M. D., Professor of General, Descriptive, and Surgical Anatomy.

Edwin Hamilton Davis, M. D., Professor of Materia Medica and Therapeutics.

B. Fordyce Barker, M. D., Professor of Midwifery and Diseases of Women and Children.

R. Ogden Doremus, M. D., Professor of Chemistry.

John Murray Carnochan, M. D., Professor of the Principles and Operations of Surgery with Surgical Pathology.

Edmund R. Peaslee, M. D., Professor of Physiology, Pathology, and Microscopy.

John Gallagher, M. D., Demonstrator of Anatomy.

A. M. Eisenlord, M. D., and Wm. B. Thompson, M. D., Prosectors to the Professor of Surgery.

A preliminary Course of Lectures will commence on Monday, the 6th of October, and continue until the commencement of the regular course.

On the Pathology and Diagnosis of the Diseases of the Reproductive Organs of Females, by B. F. Barker, M. D.

On Toxicological Chemistry, by R. O. Doremus, M. D.

On the Surgical Operations of the Eye, by J. M. Carnochan, M. D.

On Dental Pathology and Dental Surgery, by C. C. Allen, M. D.

The preliminary course will be free to all medical students, and medical men. The dissecting-rooms will be opened at the beginning of this course.

The advantages which New York offers for Clinical study far surpasses those of any other city. The students of this College can have access to the New York Hospital, Bellevue Hospital, and Emigrants' Hospital, as well as to the Eye and Ear Infirmary, and the various Dispensaries of the city. A Surgical and a Medical, and an Obstetrical Clinique will be held weekly by the Professors of these departments. Obstetrical cases and subjects for dissection are abundantly furnished for the students.

FEES.—Matriculation, $5. Demonstrator's Ticket, $5. The full course, $105. For the final examination, $30.

The candidate for graduation must be of the age of 21 years. He must have studied medicine under a respectable practitioner for three years. He must have attended two full Courses of Lectures, of which one must have been in this College, and he must present to the Faculty a thesis, in his own hand-writing, on some Medical or Surgical subject.

By the charter of the Institution a Graduate of this School can practice his profession in any part of the State without being subject to the annoyance of examinations from Medical Societies.

R. OGDEN DOREMUS,
Dean of the Faculty.

New York Medical College,
at Thirteenth Street, near Broadway.

TO READERS AND CORRESPONDENTS.

The communications of Drs. **Parkman**, **Squibb**, **Kelly**, **Cock**, and **Garrison** shall appear in our next number.

Other papers have been received and are under consideration.

The following works have been received:—

Medical History of the Expedition to the Niger, during the years 1841–42; comprising an Account of the Fever which led to its abrupt termination. By **James Ormiston McWilliam**, M. D., Surgeon of H. M. S. Albert, and Senior Medical Officer of the Expedition. With plates. London, 1843. (From the Author.)

Correspondence on the subject of the Eclair; and of the Epidemic which broke out in the said vessel. Presented to the House of Commons by command of her Majesty, in pursuance to their Address of the 23d of Jan., 1846. (From Dr. **McWilliam**.)

The Health of London, during the six months terminating March 29, 1851. By **John Webster**, M. D., F. R. S., &c. (From the Author.)

History of the Epidemic of Cholera in Chatham, Rochester, and Strovel, in 1849. By **Thomas Stratton**, M. D., Edin., Member of Edinburgh Clinical Society; Surgeon Royal Navy. In a letter to Sir Wm. Burnett, M. D., Med. Direct. Navy. Edinburgh, 1851. (From the Author.)

Principles of Physiology, General and Comparative. By W. B. **Carpenter**, M. D., F. R. S., F. G. S., etc. Third edition, with 321 wood engravings. Phila.: Blanchard & Lea, 1851. (From the Publishers.)

Surgical Anatomy. By **Joseph Maclise**, Surgeon. With coloured plates. Phila.: Blanchard & Lea, 1851. Part IV. (From the Publishers.)

A Practical Treatise on the Diseases of the Lungs and Heart, including the Principles of Physical Diagnosis. By **Walter Hayle Walshe**, M. D., Prof. of the Principles and Practice of Medicine and Clinical Medicine, in University College, London. Phila.: Blanchard & Lea, 1851. (From the Publishers.)

Special Anatomy and Histology. By **Wm. E. Horner**, M.D., Professor of Anatomy in the University of Pennsylvania, &c. &c. Eighth edition, illustrated with anatomical figures, in two volumes. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

Hand-books of Natural Philosophy and Astronomy. By **Dionysius Lardner**, D. C., &c. &c. First Course: Mechanics—Hydrostatics—Hydraulics—Pneumatics—Sound—Optics. Illustrated by upwards of 400 engravings on wood. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

The Geological Observer. By Sir **Henry T. De la Beche**, C. B., F. R. S. Philadelphia: Blanchard & Lea, 1851.

The Laws of Health, in relation to Mind and Body. A Series of Letters from an old Practitioner to a Patient. By **Lionel John Beale**, F. R. C. S. Philadelphia: Blanchard & Lea, 1851. (From the Publishers.)

The Transactions of the New York Academy of Medicine. Instituted 1847. Vol. I., Part I. Printed for the Academy. New York, 1851. (From the Academy.)

Mémoires sur la Digitaline. Par MM. **Homolle et Quevenne**. Rapports faits à l'Académie Nationale de Médecine le 8 Janvier, 1850, et le 4 Fevrier, 1851. Commissaires MM. Rayer, Soubeiran et Bouillaud Rapporteur. Paris, 1851.

Report of the Committee [of the Legislature of New York] on Medical Societies and Colleges, on petition of Dr. **Wm. Turner**, for penal enactments against bleeding. (From Dr. Tuthill.)

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by **Joseph Parrish**, M. D. July, Aug., Sept., 1851.

Report of the Louisiana State Medical Society on the Meteorology, Vital Statistics, and Hygiene of the State of Louisiana. By E. H. Barton, M.D. With an Appendix, showing the Experience of Life Insurance Companies in Louisiana. By H. G. Heartt. New Orleans, 1851. (From the Author.)

The Histories of the Colleges of Physicians and Surgeons, and of the Apothecaries' Company, including the Manuscript Annals of the London College of Physicians from 1682 to 1749, with the editor's plan of Medical Reform. Reprinted from the London Medical Examiner and one Faculty Journal. (From the Author.)

Proceedings of the Iowa State Medical and Chirurgical Society. Second Annual Meeting held in Fairfield, May 7th, 1851. Keokuk, 1851.

Proceedings of the 22d Annual Meeting of the Medical Society of Tennessee, held at Murfreesborough, April, 1851. Murfreesborough, 1851.

Minutes of the Proceedings of the Medical Society of the State of Georgia, at its Second Annual Meeting, held at Atlanta, on the 9th of April, 1851. Savannah, 1851.

Reports of the President and the Resident Physician of the Maryland Hospital [for the Insane] for the year 1850. Baltimore, 1850. (From Dr. John Fonerden.)

An Address on Medical Jurisprudence: its Claims to greater Regard from the Student and the Physician. Delivered before the Fellows of the Massachusetts Medical Society, at the annual meeting, May 28th, 1851. By David Humphreys Storer, M. D. Boston, 1851. (From the Author.)

Letter to the Right Honourable, the Earl of Shaftesbury, containing suggestions as to the Expediency of submitting certain Branches of Trade and Manufactures to Government Medical Inspection. By J. B. Harrison, M. R. C. S. in Manchester, 1851. (From the Author.)

The Dispensatory of the United States of America. By Geo. B. Wood, M. D., &c. &c., and Franklin Bache, M. D., &c. Ninth edition, carefully revised. Philadelphia: Lippincott, Grambo & Co., 1851. (From the Author.)

The Microscopist: or, a Complete Manual on the Use of the Microscope, for Physicians, Students, and all Lovers of Natural Science; with illustrations. By Joseph H. Wythes, M. D. Philadelphia: Lindsay & Blakiston, 1851. (From the Publishers.)

Elements of General and Pathological Anatomy, presenting a View of the Present State of Knowledge in these Branches of Science. By David Craigie, M. D., F. R. S. E., &c. &c. Second edition, enlarged, revised, and improved. Philadelphia: Lindsay & Blakiston, 1851. (From the Publishers.)

The Outlines of General Pathology. By M. L. Linton, M. D., Professor of Therapeutics and Practice of Medicine, in St. Louis University. St. Louis, 1851. (From the Author.)

Elements of Latin Pronunciation, for the Use of Students in Language, Law, Medicine, Zoology, Botany, and the Sciences generally in which Latin words are used. By S. S. Haldeman, A. M., Professor of Natural History in the University of Pennsylvania. Philadelphia: 1851. (From the Author.)

On the Employment of Water in Surgery. By Alphonse Auguste Amussat, of Paris. Translated from the French. By Frank H. Hamilton, Professor of Surgery in the University of Buffalo. Buffalo, 1851. (From the Author.)

A New Sign Language for Deaf Mutes. Being a Thesis for the Degree of Doctor in Medicine, presented and sustained before the Medical Department of the University of Buffalo, February, 1851. By Albert J. Meyer. Buffalo, 1851. (From the Author.)

Annual Circular of the National Medical College of Washington, D. C. Session 1851-2. Washington, 1851.

Annual Announcement of Rush Medical College of Chicago, Illinois. Session 1851–52. Chicago, 1851.

Announcement of the Course of Lectures in the Medical Department of the University of Michigan. Session 1851–52. Detroit, 1851.

Medical Department of Georgetown College, Washington, D. C. Annual Announcement of the Course of Lectures. Session 1851–52. Washington, 1851.

Report of the Medical Department of the University of Pennsylvania, for the Session 1850–51, to the Alumni of the School. By the MEDICAL FACULTY. Philadelphia, 1851.

Annual Announcement and Circular of the Memphis Medical College. Session 1851–52. Memphis, 1851.

Annual Announcement of the Faculty of McGill College, Montreal, for Session 1851–52. Montreal, 1851.

Twenty-sixth Annual Circular of the Medical Faculty of the Washington University, Baltimore. Session 1851–52. Baltimore, 1851.

First Annual Announcement of the Medical Department of the University of Nashville. Nashville, 1851.

Annual Announcement of the College of Physicians and Surgeons of the Iowa State University, located in the City of Keokuk, Iowa, for the Session of 1851. Keokuk, 1851.

The following Journals have been received in exchange:—

The Edinburgh Medical and Surgical Journal. July, 1851.

The British and Foreign Medico-Chirurgical Review. July, 1851.

The London Medical Gazette. June, July, 1851.

Monthly Journal of Medical Science. July, 1851.

London Journal of Medicine. July, August, 1851.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. July, 1851.

Dublin Medical Press. July, August, September, 1851.

Provincial Medical and Surgical Journal. Joint editors WM. H. RANKING, M. D., Norwich, and J. H. WALSH, Esq., Worcester. June, July, August, 1851.

Medical Times. July, August, September, 1851.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. RANKING, M. D., Cantab. Vol. XIII. January to June, 1851.

The Half-Yearly Abstract of the Medical Sciences: being a Practical and Analytical Digest of the Contents of the principal British and Continental Medical Works, published during the preceding six months; together with a Series of Critical Reports on the Progress of Medicine and the Collateral Sciences during the same period. Edited by W. H. RANKING, M. D., Cantab. Assisted by W. A. GUY, M. D., GEORGE DAY, M. D., HENRY ANCELL, M. D., and W. KIRKES, M. D. January to June, 1851. Philadelphia: Lindsay & Blakiston, 1851. (From the Publishers.)

The Retrospect of Medicine; being a half-yearly Journal, containing a Retrospective View of every Discovery and Practical Improvement in the Medical Sciences. Edited by W. BRAITHWAITE, Lect. on Obst. Med. Jan., June, 1851.

British American Medical and Physical Journal. Edited by ARCHIBALD HALL, M. D. July, 1851.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by WM. PROCTOR, Jr., Professor of Pharmacy, P. C. P. July, 1851.

The Medical Examiner. Edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D. July, August, September, 1851.

The Stethoscope and Virginia Medical Gazette. Edited by P. C. GOOCH, M. D. July, August, September, 1851.

The New Orleans Medical and Surgical Journal. A. HESTER, M. D., Editor and Proprietor. July, 1851.

The American Journal of Insanity. Published by the New York State Lunatic Asylum. Utica: July, 1851.

The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. PURPLE, M. D. July, September, 1851.

Buffalo Medical Journal. Edited by AUSTIN FLINT, M. D. July, August, September, 1851.

The New York Register of Medicine and Pharmacy. Edited by C. D. GRISWOLD, M. D. July, August, 1851.

The Charleston Medical Journal and Review. Edited and published by D. J. CAIN, M. D. and F. PEYRE PORCHER, M. D. July, September, 1851.

The American Journal of Science and Arts. Conducted by Prof. B. SILLIMAN,

B. **Silliman**, Jr., and **Jas. D. Dana**; and in the Department of Chemistry and Physics, by Dr. **Wolcott Gibbs**. July, September, 1851.

The American Journal of Dental Science. Edited by **Chapin A. Harris**, M. D., D. D. S., and **Alfred A. Blandy**, M. D., D. D. S. July, 1851.

Nordamericanischer Monatsbericht für Natur-und Heilkunde. Redigirt von Dr. W. **Keller** and Dr. H. **Tiedemann**, in Philadelphia, and Dr. **Herzka**, in New York. July, August, September, 1851.

The Western Journal of Medicine and Surgery. Edited by L. P. **Yandell**, M. D., and T. S. **Bell**, M. D. July, August, September, 1851.

The Western Lancet and Hospital Reporter. Edited by L. M. **Lawson**, M.D. and **Geo. Mendenhall**, M. D. July, August, September, 1851.

The Western Medico-Chirurgical Journal. Edited by J. F. **Sanford**, M. D., and S. G. **Armor**, M. D. June, July, August, 1851.

St. Louis Medical and Surgical Journal. Edited by Drs. **Linton**, **Moore**, **M'Pheeters**, and **Johnson**. July, August, 1851.

The North Western Medical and Surgical Journal. Edited by **John Evans**, M. D. July, 1851.

Northern Lancet. Edited by Drs. H. **Nelson**, and F. J. **D'Avignon**. August, September, 1851.

The Ohio Medical and Surgical Journal. Edited by R. L. **Howard**, M. D. July, 1851.

Transylvania Medical Journal. Edited by E. L. **Dudley**, M. D., H. M. **Bullitt**, M. D., and B. J. **Raphael**, M. D. September, 1851.

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THE

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FOR OCTOBER 1851.

Art. I.—*On the Pathology of Epidemic Dysentery.* By Charles Frick, of Baltimore, Maryland.

All authors heretofore who have written of dysentery, have shown a marked difference to exist between the symptoms of this disease as it occurs sporadically, and when its visitations assume an epidemic character. But both these varieties have been described as inflammation of the mucous membrane of the lower part of the alimentary canal, and the greater intensity in the symptoms of the disease in its epidemic form is supposed to depend on some particular and inexplicable constitution of the atmosphere. That dysentery is an inflammation we do not attempt to deny, but for reasons that will be presently adduced we are convinced that when it assumes an epidemic form, many cases occur in which there is a period varying from seven to ten days at the onset of the disease, when most of the so called symptoms of dysentery are present, when no true inflammation can be said to exist, and when the disease is particularly amenable to treatment. In the hope of exciting the attention of more able pathologists to a point which we cannot but think of decided practical importance, we have ventured the following remarks for your valuable journal. In the first place, let us glance at the symptoms that these two varieties present. The cases that occur sporadically we find make their appearance at all seasons of the year, but more particularly when those substances are used as diet whose immediate effect is to produce irritation of the alimentary canal. They may or may not be preceded by diarrhœa, and oftentimes obstinate constipation seems to be the immediate exciting cause. But in a short time violent tenesmus ensues with frequent calls to stool, and the discharges are found to consist of tenacious bloody mucus, inoffensive to the smell, and each operation varying from half a drachm to half an ounce in quantity. In an individual in ordinary health, decided evidences of prostration do not make their appearance until ten days or two weeks have elapsed, unless the frequency of the discharges be very great; and the patient during the whole time complains of more or less pain on pressure of the abdomen, particularly in the left iliac region. From the very commencement there is a full strong pulse, hot skin, with other evidences of febrile action, and it is only when the severity of the disease has produced exhaustion in the vital powers, or convalescence is about to be established, that these symptoms subside. The mortality among these cases is not very great, and they are always benefited by decided antiphlogistic treatment, such as bloodletting, local or general, saline aperients, &c.

On the other hand, most epidemics of dysentery, as is well known, differ widely from the symptoms we have just detailed. During the summer and autumn months, a patient presents himself complaining of diarrhœa, the stools if examined are found to be of a light colour, more or less inclining to ash, and if kept a short time, bubbles of air are found escaping from the surface. Now, if the vessel containing the discharge be placed in an atmosphere of pure air, with a solution of acetate of lead in one watch glass and lime water in another, which may be readily accomplished by covering the whole with a bell glass, in a short time the black sulphuret of lead and carbonate of lime will be deposited, thus evidencing the presence of sulphuretted hydrogen and carbonic acid in considerable quantities in the fecal discharge. This result will occasionally take place in the stools of ordinary diarrhœa, but to a much less degree. In the patients thus applying for treatment one prominent symptom is particularly observable, that is, the prostration of strength, which is entirely out of proportion to the frequency and amount of the discharges. This diarrhœa may pass off without interference, may be relieved by treatment, or be followed by and alternated with the characteristic stools of dysentery, and in the variety of the disease we are now describing, it will be found on inquiry that few cases occur which have not been preceded, or are not accompanied by discharges having somewhat this character. And here we would remark that the presence of fecal matter in the stools, which in sporadic cases is always an evidence of improvement in the patient's condition, is by no means a symptom of the same importance, for stools having this character will often be found to alternate with discharges consisting almost entirely of bloody mucus for days. Tenesmus, although usually present, is not a symptom of the same intensity as in the other form, and the pain, instead of being referred to the verge of the anus, is described as being more of a colicky character, and usually precedes by a short period the desire of going to stool. The discharges consisting of an admixture of blood and mucus with numerous epithelium scales as ascertained by the microscope, are in general much less frequent, and larger in quantity, offensive to the smell, and oftentimes contain more or less of the ash-coloured discharge noticed above. As the disease advances they become more fluid, resembling in many instances ordinary flesh washings, or better still the water in which bones and flesh have been macerating for some days in the dissecting-room. Febrile symptoms of a sthenic character we have never seen; on the contrary, as in the diarrhœa just spoken of, from the very first the prostration of strength is extreme, totally out of proportion to the frequency and amount of discharges, the skin is cold and covered with a clammy perspiration, the expression of face becomes anxious, and the pulse is weak and depressed. The results of treatment also contrast strongly with the other variety. Bloodletting, either local or general, is decidedly injurious, by adding to the prostration which is already too great, and saline purgatives increase the amount and frequency of the stools without altering their character, both of which remedies, as is well known, are in sporadic cases of dysentery of the utmost importance. Preparations of mercury are equally useless, for however valuable this medicine may be in cases occurring sporadically, the weight of opinion is decidedly against its use when the disease is of an epidemic type. Dr. James Johnson and Mr. Annesley, whose experience was derived from the dysentery as it appears in the East Indies, speak most decidedly of the efficacy of calomel, but on the other hand, Dr. Ballinghall, Mr. Walsh, who on the Ragoon expedition writes "that mercury only exasperated all the symptoms of dysentery," Dr. Frank and Sir James Macgrigor are all of the other opinion, and in this they are supported, we think, by most practitioners of any note at the present day.

If we consider attentively the collection of symptoms we have previously detailed, and note the very great mortality attendant upon them, even in the first few days, we cannot but be struck with the fact that the cause of death is not sufficiently evident, that the severity of the local disturbance is inadequate to produce a fatal result, and the idea constantly intrudes itself, that some morbid poison in addition to the local disease has an agency in producing the extreme prostration and subsequent fatal termination. But this idea has some facts to substantiate it, and is in reality deduced from the facts themselves. In the fall of 1849 we examined the bodies of five convicts in the Maryland penitentiary who had died, after a few days' illness, of this disease, and having the symptoms described above. In no one did we find decided evidences of inflammatory action. The rectum and lower part of the colon were ramified throughout with arborescent injection, and the shreds of mucous membrane, when drawn off by the forceps, did not exceed six or seven lines in length. But in no case was there either ulceration or sloughs, although the membrane throughout was more deeply coloured of a black or blackish-green than is observed in a healthy individual. The follicles also were much enlarged. On the other hand, in all cases of this disease occurring sporadically, and ending fatally, we have always found a local lesion sufficient to produce death.

The causes that produce these varieties differ equally. Isolated cases can be explained by the individual having been subjected to exposure, such as wet feet, a sudden check to the cutaneous exhalation, or more commonly still to errors in diet. But in the epidemic variety no such distinct causes are necessary, although errors in diet, as we shall presently explain, increase the tendency to an attack. In the Maryland penitentiary, where nearly the same body of men are always confined, no case of disease of this character is likely to be passed over unobserved; and having kept, during the past and present summer, the correct range of the thermometer with the daily number of cases of diarrhœa, cholera morbus, and dysentery subjected to treatment, we are enabled to show that the correspondence between the two is very exact. In other words, taking the range of the thermometer to be between 78° and 95°, we have found the cases to increase and decrease almost in proportion to the elevation and depression of the temperature. And it must be remembered that this result occurred in individuals subjected almost day by day to the same articles of diet. We are well aware that this is no new fact, for the correspondence just detailed has, doubtless, been observed numberless times by different pathologists. Stoll, who makes the most decided difference between dysentery as it occurs in the summer, and at other seasons of the year, thinks the principal cause for this difference to be the high temperature that then prevails, but he explains the effects by supposing a sudden check to the perspiration to occur, as a consequence of which the internal membrane becomes congested and subsequently inflamed. The deduction that seems to us naturally to occur from it is, that the starting point of the morbid changes that occur in the disease, is to be found in some effect produced by excessive heat, or, in other words, depression of the vital powers.

Let us glance for a moment at the changes the food undergoes in digestion. It is taken into the stomach, supplied with gastric juice, biliary and pancreatic secretions; its nutritive part separated from the excrementitious portion, which is passed off through the rectum and colon. If all these secretions are supplied in due proportion, and the food remains the requisite time in the alimentary canal, no fat globules can be distinguished, all this substance having undergone digestion by the addition of the pancreatic secretion, nor do we ever discover anything resembling fermentation taking place, for this process is effectually prevented by the presence of the bile, as Bernard's recent experiments have proved. If, on the other hand, we take a portion of food consisting of the ordinary articles of diet, particularly those containing much sugar or vegetable acid, and subject it for some hours to the combined influence of heat and moisture, we will find nearly the same result occurring, as if the meal had been placed in the stomach, and the ordinary healthy secretions withdrawn; that is, we should find the food undergoing decomposition, numerous organic acids produced as a result of this decomposition, and large quantities of sulphuretted hydrogen liberated. A principal cause of this disease has long been acknowledged to be owing to impure air derived from the patient's own body, such, for instance, as is generated in the holds of vessels, hospitals, camps, and all those places where large bodies of men are collected together, or where their excrements are allowed to remain. Moreover we are aware how common diarrhœa and colicky pains are in those students who spend much of their time in the dissecting-room, where animal decomposition is taking place. But we deduce from the facts just stated that the symptoms previously detailed are produced by the effects of some one of these morbid poisons being absorbed from the surface of the intestinal canal into the circulation, and from its known effects upon the human frame, it would seem that this agency might be attributed to the sulphuretted hydrogen. Whatever it may be, is not in reality a subject of vital importance, for after all it is but an effect of a cause still further removed. If we look upon some element of this character as the cause of the condition which produces the morbid discharges from the bowels, and, at the same time, acknowledge that this element, whatever it may be, is a consequence of the absence of the biliary and other secretions, we are forced to look for the starting point of the disease in the abolition or perversion of some power which controls these secretions. We have shown, in speaking of the treatment of this form of dysentery, how little power those remedies, whose admitted action is to produce increased biliary secretion, have over the disease. By forcing the liver to secrete more bile, a temporary benefit may be experienced, but it must be temporary only, inasmuch as the cause which first produced diminished secretion of this organ is still in existence. We have stated the effect of a high temperature in increasing the number and severity of the cases, independent of irritating articles of food, and it will be seen, on reference to any writer on the causes of epidemic dysentery, how great an influence in producing the disease may be ascribed to causes which depress the vital powers, whether they be physical or mental, such as fatigue, forced marches, the moral effect of a defeat in armies, &c. And we are aware, that although the mode of action of the different secretions is, in most cases, a chemical one, yet for their proper elimination how much is due to a requisite supply of nervous energy, so that when the latter is much depressed, secretion takes place in a much diminished quantity. An illustration of this is constantly observed in many cases of so-called cholera morbus. For instance, an individual, during the summer season, is in the habit of taking, day by day, nearly the same articles of food and in the same quantity. Under ordinary circumstances, no disturbance is produced, digestion is performed properly, and no inconvenience is experienced. But, let anything occur by which the nervous system becomes much debilitated, whether it be excessive bodily fatigue or mental depression, and we find in a short time that the same articles of food, which previously produced no disturbance, are rejected, almost undigested, by vomiting and purging. The explanation is, that as a consequence of nervous exhaustion, secretion does not take place, and the undigested food produces such decided irritation that nature endeavours to relieve the cause by ridding the patient of the effects, and we all recognize this principle in our treatment, first by advising our patients to abstain from food after being subjected to those causes which tend to produce this depression, and secondly in relying principally upon the use of stimulants when the disease itself is declared.

Having advanced so far and ascertained that in certain cases of dysentery, we are to look for the primary cause in depression of nervous energy, we will briefly detail the facts which led to these speculations, and endeavour to offer some suggestions for treatment which we are assured rest on a broader foundation than mere theory.

In the summer of 1850, during which dysentery prevailed to a great extent and was very fatal, we were called to a man who had had the disease for a period of three weeks. He was much emaciated, and so weak that his stools were passed in bed, and they varied in number from twenty to thirty in the twenty-four hours. They resembled in appearance ordinary flesh washings, and their odour was so offensive that his room was almost intolerable. This man was in such a condition of life that he had commanded the best medical treatment, and all the ordinary modes of purifying the atmosphere of his room had been observed. Thinking the patient's condition hopeless, but fearing that this state of things mights produce disease in other members of his family, and at the same time supposing that the offensive odour was produced by decomposition within the alimentary canal, it occurred to us to administer something that would prevent this decomposition and render the discharges less deleterious. We accordingly ordered naphtha and charcoal, the first from its known properties of preventing decomposition, the other for the purpose of absorbing the different gases as they were liberated. To our surprise the next day the stools had not only lost all their offensive odour, but contained some slight evidences of fecal matter. In a few days they were almost natural, and although no other remedy was administered, they continued so until convalescence, which owing to his excessive debility was much protracted, was fairly established. The remarkable recovery of this man, recalled to my mind the popular idea of the efficacy of powdered charcoal and burnt rice in dysentery, which I had heard advanced frequently, but had never attached much importance to, and I was inclined to give it a further trial. Abundant opportunities were presented, both in private practice and at the Maryland Penitentiary, but as no exact record was preserved until this summer, I will confine myself to those cases which have occurred in the Maryland Penitentiary since the first day of June, a period of seven weeks. During that time forty-six cases have been treated, thirty-one having occurred since the first day of July, a period of three weeks. No one of these cases has been fatal, and the most marked difference has been observed in the symptoms of the different varieties, the two extremes having been well marked, but the intermediate cases being more unsatisfactory. Rochelle salts followed by pills composed of strychnine, subnitrate of bismuth and morphia were administered to twenty-one of these forty-six cases. In thirteen the effect was perfectly satisfactory, the duration of the disease varying from twelve hours to three days. Five of the nine who were not benefited were made decidedly worse, the mucous and bloody discharges increasing in quantity and frequency, while in the other four, during the administration of the salts loose feculent discharges were produced, but they immediately became dysenteric on its discontinuance. Some of these cases were treated with charcoal and naphtha, and in four of the five first mentioned the beneficial result was very decided, in the other the effect was negative. In twenty of the forty-six cases, charcoal and naphtha suspended in cinnamon water was given from the first. In fourteen of these the beneficial result was most decided, in two or three instances but one unhealthy stool being discharged after the first dose of the remedy. In the whole fourteen the stools became natural in the course of forty-eight hours. In four of the six others, the discharges became increased in quantity and.frequency after a few doses of the charcoal and naphtha. Rochelle salts was then administered, and the almost immediate benefit in three of the four cases was very apparent. Every case not benefited by either of these modes of treatment we found exceedingly obstinate, and convalescence was delayed much beyond the usual time. Although our experience out of doors is not thus reducible to numbers, we can state that very nearly the same results have occurred, with the exception that the cases to be benefited by charcoal and naphtha were not so numerous. Even in this small record of cases the beneficial effects of the remedies employed may, we think, be perceived, but we are willing to admit that many and opposite modes of treatment might have restored the patient to health. Our object was, after having contrasted the symptoms and *post-mortem* appearances of dysentery as it makes its appearance under different conditions, and speculated upon the cause of this difference, to show that it was equally marked in the treatment of the two varieties. It is true that in all local inflammations a marked difference is observable between the cases of disease that occur sporadically, and when they assume an epidemic type. We are well aware that bloodletting, which is the sheet-anchor of safety in the treatment of pneumonia when it occurs sporadically, is absolutely injurious in some epidemics of this disease; but if a fatal result should ensue, decided evidences of inflammation will be found in both. That such is not always the case in dysentery, at least during the first week or ten days, we have already shown, nor indeed has it ever been denied by the highest authorities. Grisolle, in his "*Pathologie Interne,*" describes dysentery as a disease characterized by colics more or less severe, by a frequent and almost constant desire to go to stool, and by the discharge of a small quantity of bloody mucus or reddish serum. In speaking of the *post-mortem* appearances he says, in the bodies of those persons who die in the first days of acute dysentery, the mucous membrane of the colon and rectum, sometimes even as far as the small intestine, is somewhat reddened, thickened and rather more friable than usual. The follicles of the colon are increased in size and their orifice is marked by a black point, and in addition to these changes the intestinal walls are found to be more or less œdematous. He then goes on to state that when the disease is further advanced, ulceration makes its appearance. Twining and Sir James

Macgrigor, on the contrary, in detailing the *post-mortem* appearances of dysentery as observed by them in the Peninsula and the East Indies, state that in every case examined, large and extensive ulceration was found to exist. This is readily explained by the fact that the cases did not prove fatal until eight or ten days after the commencement, or that the disease advanced with a rapidity to which in this latitude we are unaccustomed. Their results cannot, however, disprove that there is a stage, be its duration longer or shorter, which in a majority of cases readily yields to treatment, and if the cause be analogous or identical to what I have suggested the proper mode of treatment must occur to every sound thinking man.

We would, in conclusion, call your attention to the very marked similarity between the disease so fatal among children during the summer months, called cholera infantum, and the variety of dysentery we have been speaking of. Cholera infantum is confined almost entirely to cities, or where large numbers of children are crowded together. The number of cases bears a very exact ratio to the intensity of the temperature, and the child's strength is prostrated out of proportion to the quantity and frequency of the alvine evacuations, which at first consist either of undigested food, or light-coloured or greenish discharges. These continue for a certain length of time, and should the child die, no evidence of inflammation of the alimentary canal is revealed beyond a slight softening of the mucous membrane, and enlargement of the follicles, principally of the small intestine. If, however, the disease is further advanced, the character of the stools become changed, mucus and blood are occasionally observable, and the greenish discharges which, according to Dr. Golding Bird, contain altered blood, are more constant. A post-mortem examination of these cases shows that the follicles have become reddened as well as enlarged, many of them are ulcerated, and occasionally the mucous membrane itself has undergone the same change. In the treatment, many practitioners maintain that small doses of calomel exert the most decided beneficial effect; but the weight of authority seems to be opposed to this mode of treatment, most physicians counselling almost entire abstinence from drugs, and in their place advise close attention to those means which act by imparting tone and vigour to the nervous system, such as cold baths, removal to the country, or sea air, port wine, &c., and to these means my friend, Dr. Thomas Buckler, has, for a number of years, been in the habit of adding small doses of charcoal with most decided benefit. Our weekly tables of mortality throughout the summer and autumn, exhibit a very great correspondence between the deaths produced by this disease, and those occasioned by dysentery; and this we can readily realize when we consider that the producing causes of both are almost identical. The effects are found to differ principally from the difference of constitution that exists between children and adults.

The foregoing remarks have been intruded upon your readers merely for the purpose of calling their attention to a certain form of dysentery at a period when remedial measures may be of avail. We do not pretend that the charcoal and naphtha suggested by us, will prove of as much importance as some other remedies administered for the same end; for, even admitting that sulphuretted hydrogen plays the decided part we have suggested; common alum, or better still, chloride of alumina will be found to answer a much better purpose. And in reality we are but then treating the effects of a cause which has been or is still in existence.

As it now stands, the treatment of epidemic dysentery is absolutely negative, if not decidedly injurious. Dr. Robert Williams in vol. ii. page 563, has collected and recorded the results of upwards of 32,000 cases of this disease, in which the mortality averages as much as one in every nineteen cases. And in the dysentery which prevailed in Edinburgh in 1828, Dr. Christison considers the mortality in eighty cases to have been one in four. In the military hospitals also at Namur in 1831, out of one hundred and seven cases, twenty-six died, or one in four. These cases could scarcely have done worse had all remedial means been omitted, and the cure trusted to the unaided efforts of nature.

It may be objected that sulphuretted hydrogen could not produce symptoms of such importance, because it is well known that quantities of it are taken into the stomach in many mineral waters without unpleasant consequences, but it must be remembered that the quantity of this gas taken into the stomach by drinking a large quantity of sulphuretted water is exceedingly small, and it, in all probability, is quickly destroyed by the chlorine of the common salt almost always present; while, on the contrary, if sulphuretted hydrogen be given off as we suggest it may be, it is liberated at a part of the alimentary canal far removed from any such influence.

BALTIMORE, *July* 24, 1851.

ART. II.—*Cases of Amputation.* By JNO. FRED. MAY, M. D., Professor of Surgery in the National Medical College of Washington, and one of the Surgeons to the Washington Infirmary. (With a wood-cut.)

CASE I. *Scrofulous Degeneration of Femur.—Amputation at the Hip-Joint.*—In the early part of November, 1850, I was requested by Dr. Morgan, of this city, to visit Richard Eaton, who, he informed me, had been bedridden for many months, from disease of the os femoris and knee-joint. After examining the limb, I advised that he should be removed to the Washington Infirmary, for the purpose of having it amputated, to which he consented, and the following is an abstract of his case:—

Richard Eaton, aged 37, fisherman, entered the Washington Infirmary on the 5th of November, 1850.

In August, 1847, while on a fishing excursion down the river, discovered a small lump about the size of a filbert below the right knee. The swelling was accompanied with much pain, and continued to increase, until the entire joint and contiguous parts of the thigh were very much enlarged.

In March, 1850, it suppurated, and discharged very freely, which gave him some slight relief, but in the month of May he was obliged to confine himself to his bed, from which he has not arisen since that period. At this time there are as many as four deep sinuses extending down to the shaft of the bone, and opening by fungoid orifices on the thigh.

The thigh is throughout enormously enlarged, *to at least twice its natural size*, and is œdematous up to the groin, and very much inflamed in its middle and superior portion.

The knee-joint has long since been destroyed by ulceration, to such an extent, that the foot falls on either side, unless supported. The discharge of pus from the different sinuses and the joint is very great (at a moderate computation at least half a pint a day), and the part presents a most disgusting aspect, from the free generation of maggots in the limb and joint. His pulse is now 106. He has burning in the hands and soles of the feet regularly, as evening approaches. He had an attack of diarrhœa in July last, which was very severe, and lasted fourteen days. Since that time he has not been troubled with it. His digestive organs are now in a tolerably good condition, notwithstanding that he takes from three to six teaspoonfuls of laudanum every night, before he can get any rest.

With the exception of the diseased limb, his whole frame is very much emaciated, and in appearance he is anæmic.

He has a bedsore over the sacrum, about as large as a twenty-five cent piece, deep, and for several inches around it the integument presents an angry and livid colour. In his habits he has always been temperate.

A nutritious diet principally of animal food was ordered for him, and the following powder to be taken three times a day: ℞.—Quiniæ sulphat., ammon. carb., g. camph., āā gr. ij. M. To be taken each time in a tablespoonful of brandy. At night tinct. opii ʒiij, to compose and relieve him. I did not of course think it prudent to stop, although I diminished the opiate, to which he had been so long accustomed. His stomach revolting at the carb. ammoniæ and camphor, they were discontinued in a few days, and five grains of the sesquioxide of iron given with the quinine and brandy.

The bedsore was dressed with the cerat. zinci carb., and pressure removed from it by a circular cushion, and he was placed on an air bed.

This treatment was continued until the 14th of November, when, his condition having slightly improved, I decided on removing the thigh at the hip-joint, for the following reasons:—

1st. The soft parts are diseased to such an extent that it is impossible to get a proper covering for the bone, except in its upper portion, and even here, and as high up as the groin, the tissues are enfeebled and œdematous.

2d. The shaft of the femur can be detected in a very diseased state high up, and I believe from this fact, in connection with the state of the soft parts, and the long duration of the disease, that the cancellated structure of the entire bone is involved, and my colleagues concur with me in this opinion.

The patient, aware that he could live but for a few weeks, was perfectly willing to submit to the operation, though told that he might, in his debilitated condition, die on the table.

The operation was performed on the 14th of November, in the presence of the medical class and a number of professional gentlemen, in the following way: The patient in a state of complete anæsthesia from chloric ether, was brought into the amphitheatre, and laid on a narrow table, the nates projecting well over its edge. The artery was compressed by an assistant with the thumb against the pubis. The limb (which from its size required to be supported by two assistants) was then slightly raised, and flexed upon the pelvis, so as to relax the muscles on the anterior and upper part of the thigh. The testicles being drawn well upwards out of the way, and the sound limb to the opposite side, a long and narrow one-edged knife nearly twelve inches in the blade was then introduced, a little above the *tuberosity* of the *ischium*, carried as near the neck of the bone as possible, and pushed out on the opposite side, about one inch and a half below the *anterior superior spinous process of the ilium.* A flap between six and seven inches long was now cut downwards, from the front of the thigh. The knife was of course passed much beneath the femoral vessels, and they were consequently not divided until the lower edge of the flap was being cut; this enabled an assistant to pass his hand into the upper part of the incision, back of the knife, and thus to grasp and securely compress the femoral artery *before* it was divided by the passage of the knife downwards. This flap was now raised and drawn forcibly upwards by the same assistant, the femoral artery being still so securely held by him that scarcely a drop of blood escaped from it or its branches. To prevent the fingers from slipping, a soft piece of rag was held against the cut surface. The thigh was now abducted and forcibly depressed by the two assistants having charge of it, so as to throw the head of the femur forwards, and from the acetabulum as much as possible, and the knife was carried across the capsular ligament, until it was freely divided. The head of the bone now started from the acetabulum, the round ligament was divided, the knife passed behind the head, and a posterior flap cut a little longer than the anterior. As soon as the limb was removed, the vessels in the posterior flap were compressed by sponges held against them, until they were separately tied. Ligatures were applied to them first, and then the femoral, the profunda, and smaller branches in the anterior flap were secured. Ligatures were applied in all to twelve arteries.

Hemorrhage having been completely arrested, the edges of the flaps, on account of their great size and weight, were approximated by four points of the twisted suture, with broad adhesive strips in the intermediate spaces, and water dressing was applied over the wound.

Not more than eight ounces of blood were lost in the operation.

The operation itself was performed in half a minute; and I was most ably assisted in it by my colleagues, Professors Miller, Johnston, and Stone, and Drs. Wotherspoon and Coolidge of the U. S. Army, to whom my thanks are due for the very important aid which they rendered me.*

The patient did not evince the slightest consciousness during the operation, and on being told, when he awoke, that the limb was removed, he expressed great surprise. The wound being dressed, he was removed to his bed, and the simple water dressing was ordered to be continued, and four teaspoonsful of tinct. opii were given to him at about 3½ P. M.; this being about the usual quantity which he was in the habit of taking, before he entered the Infirmary. 8 P. M. Pulse 98; not having been composed by the first dose of laudanum, ʒiij more were given.

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* Immediately after its removal the bone was sawed through longitudinally by Prof. Stone, and the entire cancellated structure extending through the trochanters, the neck, and the head, was found to be very much softened (cheesy) and filled with pus. The external table in this the upper third of the bone did not seem to be much involved, though below it was much affected, but the cancellous portion was throughout a mass of disease. The cartilages covering the head and lining the acetabulum were smooth and healthy in appearance. The soft parts were infiltrated with serum throughout the whole limb, which continued to ooze from it very freely for many hours after its removal. The muscles were pale and flabby, and in the lower half of the thigh they were blended together and disorganized.

November 15*th*, 10 A. M. Slept four or five hours during the night, and feels better; spirits good; pulse 96; took for breakfast tea and toast, and a soft boiled egg. Has been a great smoker before and during all his illness, and asks to be allowed a cigar—granted; at dinner chewed a few mouthfuls of beefsteak, and took some coffee and dry toast; dry toast and tea for supper. 9 P. M. Pulse 104 to 106. Soft compresses soaked in warm water, ordered to be applied to wound every few hours, and covered with oiled silk, to prevent too rapid evaporation. Bedsore dressed with the cerat. zinc. carb., and over this adhesive plaster. Ordered tinct. opii ʒiij.

16*th*. 10 A. M. Slept again about five hours during the night. Took coffee, dry toast and soft boiled egg for breakfast, and feels better. Pulse 90, soft and regular, and skin moist. Warm water dressing continued, and bedsore dressed as yesterday. At dinner, took a few stewed oysters with a cup of coffee and dry toast, and smoked a cigar. 8 P. M. Pulse 88; wound discharging quite freely; discharge thin, and slightly coloured. Took coffee and dry toast for supper. Ordered tinct. opii ʒiij.

17*th*. 10 A. M. Slept well last night. Pulse 88; same dressing to wound and bedsore, continued. Took out one of the sutures. Took same breakfast as yesterday, and with appetite. Wound looks well, and union appears to have taken place in a large portion of it. For dinner, chicken soup, and a small piece of boiled chicken, which he desires. Has had no passage from his bowels since the operation. Ordered ol. ricini ℥ss; mist. camph. ʒij; aq. menth. q. s. M. Ft. haust. 7 P. M. Has had two healthy looking evacuations from bowels. Urine clear and healthy looking. Pulse 96; continue iron, brandy and quinine. At bedtime tinct. opii ʒiij.

18*th*. 10 A. M. Has slept well. Pulse 86; tongue moist and clean. Took same breakfast as yesterday. Removed remaining sutures, and applied fresh adhesive strips to sustain the edges of wound. Free discharge from it. Same dressing continued. Ordered half a pint of oysters for dinner. 8 P. M. Pulse 86; some pain in stump. Ordered tinct. opii ʒiij.

19*th*. 10 A. M. Pulse 100; has not slept well, but took his usual breakfast with appetite. Discharge from wound free, thin and brown. Same dressings continued. 8 P. M. Pain in stump; give ʒiij tinct. opii. Pulse 86; spirits good. Had a healthy and natural evacuation from bowels in the afternoon. Eat for dinner to-day two roasted Irish potatoes, and a small piece of roasted chicken, and smoked during the day two cigars.

20*th*. 10 A. M. Has slept some and looks better. Pulse 86; took his usual breakfast, only substituting tea for coffee. Wound discharges very freely. Same dressings to it continued. Ordered for dinner, half a pint of stewed oysters, with roasted potatoes, and allowed two cigars during the day. 8 P. M. Considerable pain in stump. Pulse 84. Ordered tinct. opii ʒiij.

21*st*. 10 A. M. Has passed a bad night, very restless and starting in his sleep. Countenance expressive of much suffering. Pulse 100; very free thin discharge from wound. Four of the ligatures on small vessels in the lower flap came away this morning, and considerable hemorrhage followed. Partially opened the wound, and removed a recent coagulum, and also a quantity of very dark and offensive coagulated blood, that had evidently oozed out soon after the operation, probably from the acetabulum, as it lay in contact with it. Arrested the bleeding, which was quite free, and proved to be from the ischiatic artery. Re-applied water dressings, and ordered tinct. opii ʒiij. 8 P. M. Pulse 108; has taken his usual supper, and has a small stool to-day. Stump hot; apply cold water dressing.

22*d.* 10 A. M. Has had a good night. Pulse 102 to 104; eat his usual breakfast with relish. Stopped the brandy to-day, and ordered in its place a wineglassful of London brown stout, with five grains of protocarb. ferri, Vallet's (in place of the sesquioxide and quinine, which he has been taking), three times a day. Half a pint of stewed oysters for dinner, and may smoke his cigars as usual. 8 P. M. Pulse 102 to 104; easy, took his meals with a good relish to-day, and says he feels better and stronger. Ordered tinct. opii ʒiij; and ʒij more to be taken in the night, if restless, and unable to sleep. The additional dose was allowed, because, for the two or three nights past, he has not been able to sleep as well as usual.

23*d.* 10 A. M. Slept well after taking the second opiate, being very restless before. Discharge from wound more consistent and healthy. Allowed for dinner a tender piece of beefsteak and two potatoes, and during the day two cigars. 8 P. M. Pulse 98; has had a very comfortable day, and is in good spirits. Tinct. opii ʒijss, and a smaller dose to be repeated late if necessary.

The treatment which is here given, for the first nine days after the operation, was continued with slight variations for the four succeeding weeks. The last ligature came away on the 14th of December. On the 25th he sat up in bed, and on the 29th in a chair, and was wheeled about the room and passage. On the 31st of December, the stump was almost entirely healed, and he was able to sit up a couple of hours at a time, and on the 1st of January, he moved about the room on crutches, for the first time. From this period, he improved more rapidly in flesh and strength, and he left the Infirmary on the 26th of January. On the 17th of February I called at his house, and found that he was out, and able to attend to business in which he is at this time, July 18th, actively employed, and supporting by it a large family. The stump continues to be perfectly sound, and he says that his health is as good as it ever was. In all respects, he presents the appearance of a strong and vigorous man.

The preceding case is a striking illustration of the recuperative power possessed by the human system, in its recovery from the very lowest degree of prostration and disease, as soon as the cause which had produced this state was removed.

Every surgeon of experience must have occasionally witnessed the extraordinary reactive power which some constitutions manifest, when old or chronic sources of irritation are removed from them. A knowledge of this fact alone, encouraged me to undertake the foregoing operation, upon a patient so enfeebled and exhausted by protracted irritation, and the wasting discharges attendant on it,* that it hardly seemed possible he could live, after amputation at the hip joint; the most extensive mutilation to which the human system can be subjected. But knowing well that all shock to his system could be avoided by the wonderful agency of anæsthesia, and believing that the wound, however formidable and extensive, if he survived its immediate effects, could not be more oppressive to him than the mass of disease with which he was encumbered, were the main grounds upon which I based my hopes for the success of the operation.

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* The quantity of pus discharged from the limb I have stated to have been, at least, half a pint in 24 hours. The students in the Infirmary, who daily superintended the dressing of the part, have stated to me the amount much greater than I have reported it. I am sure from my own observation, that the discharge as reported, large as it may seem, falls below the amount of pus which the man daily lost.

During the treatment, I had to contend with two difficulties of a very serious character. One, the prevention of the sloughing over the sacrum, induced by pressure, and his emaciated state. For the first four weeks after the operation, it required the most constant attention to prevent the extension of this ulceration, and he often suffered more from the burning and pain at this point, than he did in the wound itself. The other difficulty to which I have alluded, was the formation of an extensive abscess in the groin, which burrowed downwards, until I was fearful effusion into the abdomen would take place. This commenced on the 24th of November, by a slight swelling about an inch external to the femoral artery, which I opened freely as soon as fluctuation was manifest. But the abscess continued to extend internally, and towards the femoral artery, forcing me to divide at different times, the several broad muscles of the abdomen to evacuate its contents, until finally, nothing but the peritoneum itself seemed to interpose between it and the cavity of the abdomen. But this barrier, though slight, remained intact, affording a beautiful illustration of the capacity of the delicate serous membrane to resist the most profuse and protracted suppurative action, for although the part discharged freely and continuously for weeks, it finally granulated and closed.

It will be observed that, from the commencement, I placed the patient upon a most sustaining treatment; that I allowed him animal food and stimulus freely, both before and immediately after the operation, and that it was continued during the entire treatment of the case. He took daily his brown stout and iron, and beefsteak was the principal article of food at his dinner, while the stimulus of smoking, to which he had been so long and so freely habituated, was not withheld from him. Nor was it deemed prudent to discontinue the opiate, which daily use had rendered indispensable. It was given to him freely every night, as sleep without it was impossible, and without sleep he must soon have sunk. As he improved in strength, the quantity of the opiate was gradually diminished, for I find, on reference to my notes, that on the 17th of December, the nightly dose of laudanum was reduced to ʒi, and on the 2d of January, to gtt. 40, and before he left the Infirmary he had entirely dispensed with its use. It is a little strange that, under the large doses of opium he took, the assimilation of his food should have gone on so well, for the integrity of his digestive organs continued, most fortunately for him, unimpaired throughout. His appetite was good, his digestion excellent, and, after the first two or three weeks, the evacuations from his bowels were regulated almost daily by nature.

A few words in regard to the manner of performing the operation.

There is, perhaps, no amputation which counts more methods in its performance than that at the hip-joint. No less than nineteen have been proposed by different surgeons. They may all, however, be classed under the flap, the circular, or the ovalar method. That which I selected was the double flap operation (the anterior and posterior flap), as recommended by Béclard with a slight modification of my own; viz., that of introducing the knife at the inside just above the tuberosity of the ischium, instead of at the outside, below the spinous process of the ilium.

When a surgeon can select his operation at the hip-joint, I think this method is decidedly preferable to any other that has been proposed, for the following reasons:—

First. From the facility and security with which hemorrhage can be commanded. Many surgeons of eminence,* in view of the great danger from this cause, recommend tying the femoral artery before performing the amputation, and thus complicating it by a double operation. Either this must be done, in the lateral flap, the circular, or the oval methods, or else the operator must rely exclusively on compression of the artery, over the pubis, by an assistant. Now in an operation so formidable, so near the trunk, and in which so many large vessels are divided, I think there is some hazard in trusting to compression alone, for a change of position on the part of the assistant, or of the patient, might be fatal to him. But in the antero-postero flap operation, the femoral artery not being divided until the lower edge of the flap is being cut, the artery is caught and securely compressed, *before* it is touched by the knife, by the assistant, who stands ready to raise the flap, and thus there is double security against hemorrhage from the main artery of the limb, or its branches. It will be noticed, that I feared hemorrhage so little from the anterior flap, that I tied the vessels (though comparatively small) in the posterior flap first, originating as they do from the interior of the pelvis, and consequently not being amenable to compression.

Secondly. This operation can be performed with greater celerity than any other mode of amputating the hip-joint.

I admit that rapidity in the performance of a surgical operation, as a general rule, is a matter of secondary importance, and in most cases the correctness of the advice of Sir Charles Bell, in his remarks on the operation of lithotomy, must be admitted, "To pay no attention to fools with watches in their hands." But in amputation at the coxo-femoral articulation, celerity *is* of great importance. The extent of surface divided is so great, and the vessels (independent of the femoral) so numerous, that any delay or bungling in the operation might, and probably would, compromise the life of the patient. I have no doubt that it has happened more than once, that he has died on the table from hemorrhage, when the shock to the system has been made to bear the blame.

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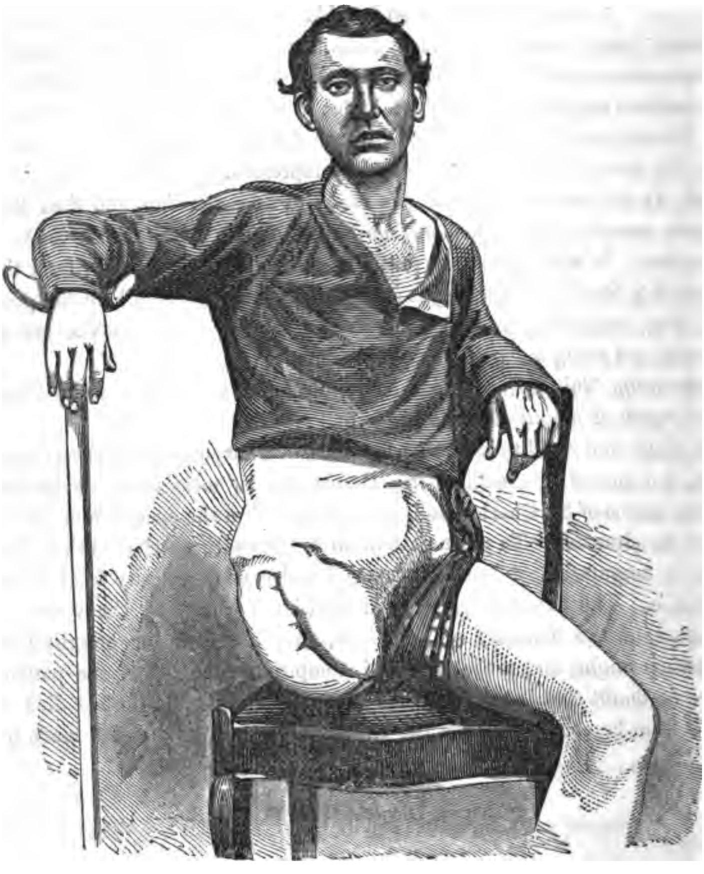
* Larrey, Delpéch, Roux, Blandin, &c.

By Béclard's method the operation may be done in fifteen seconds as easily as in thirty. I have repeatedly performed it on the subject in that time, and but for a slight delay, caused by the malposition of the patient at the moment of disarticulation, the operation in the present case I am sure could have been done in half the time that it occupied.

I find that the mode of operating as I have described it, is usually ascribed to Liston, by English authors. It is true that this great and original surgeon has described the operation in his *Elements of Surgery*, and he twice, according to Mr. Fergusson, performed it on the living, though with an unfortunate result in both cases; but by all French authors the operation is described as Béclard's, and from the examination which I have given to the subject, I think that the credit of it, if credit there be, is due to the French, and not to the English surgeon.

The form of the stump in Eaton's case is as perfect as I could desire. It speaks, however, for itself, from the accompanying cut, executed from a Daguerreotype taken on the 18th of July, 1851.



CASE II. *Scrofulous Disease of Knee-joint with Necrosis of the Shaft of the Femur. Amputation near the Trochanter.**—Thompson, aged about 20, entered the Baltimore Infirmary with scrofulous degeneration of the knee-joint far advanced, and which seems also to have extended to the inferior half of the os femoris.

The disease is of long-standing, and the patient in his general appearance exhibits all the marks of a strumous constitution. The knee is very much enlarged, and all motion in it has long since been lost. The swelling also extends to some distance up the thigh, on the lower portion of which, and also about the knee, several fistulous tracts exist, through which a probe can easily be passed in different directions down to the diseased bone. The patient is in a hectic state, and much exhausted and emaciated by night-sweats and occasional diarrhœa.

He suffers great pain in the hip, especially as night comes on, and he says that a surgeon of eminence, who has examined his case, has advised him not to undergo amputation from a belief that the hip-joint itself is diseased. After a minute examination I feel satisfied that the articulation above is not affected, and that the pain felt there is purely sympathetic. There is neither swelling nor tenderness on pressure, however firm it is made, about the joint, and the free motion of the thigh does not augment the pain, and the soft parts in the upper portion of the thigh present a perfectly healthy appearance. I, therefore, advised amputation. But the patient was unwilling to submit to it; in fact he positively refused his consent, being influenced in his decision by the opinion which had been given him of the articulation at the hip being in a diseased state. He remained, however, an inmate of the Infirmary for several months, gradually declining in strength; and finally, the symptoms about the hip not having increased, he expressed a desire to have the limb removed.

This was accordingly done. Believing that the shaft of the femur was to a considerable extent involved in the disease, the first incision was made about the middle of the thigh by the circular method, the artery being compressed by the thumb of an assistant over the pubis. On reaching the shaft of the bone it was found to be very much hypertrophied and rugous, and the incisions, therefore, were extended upwards until a point was reached where the bone presenting a healthy appearance, it was sawn. This was about an inch below the trochanter minor.

The soft parts were dissected from the limb soon after its removal, and a very large and dark-looking sequestrum was found projecting from the shaft of the bone a little below its centre. It was firmly embraced by the new bone which had formed around it, and from which it projected about an inch. The upper portion of the bone where the saw was applied appeared to be in a perfectly healthy condition. The parts concerned in the knee-joint were so blended together and destroyed, that it was difficult to detect any part of its structure; and the muscles for some distance above it were pale and flabby, and the cellular tissue filled with serum.

The patient did not lose in the operation more than the average quantity of blood in amputation of the thigh, but he bore it badly. His pulse became very rapid and feeble and continued so for several hours afterwards. In fact there seemed to be great danger that he might not survive the immediate shock of the operation. The following are the minutes of his case for some days subsequently.

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* This case came under my care while I was one of the Surgeons to the Baltimore Infirmary.

Wednesday, 1 P. M., soon after the operation. Pulse 140, feeble, and very much depressed in his looks. *Evening.*—Pulse 135. Restless, and great pain in the stump; countenance still depressed and anxious. Ordered acetat. morph. gr. ¼ every hour until rest is produced.

Thursday.—Slept very little during the night. Pulse, however, not quite so rapid. Slight diaphoresis. Tongue moist and clean. Slight spasms in stump, and some pain in back. Fullness about abdomen. Ordered sulph. sodæ ℥ss, and repeat the dose if it does not move the bowels during the day. Barley water and chicken broth for nourishment. *Evening.*—Pulse 120. Considerable pain in stump, and great restlessness. Ordered acetat. morph. gr. ¼, and to be repeated every hour until composed.

Friday.—Has had several hours sleep during the night, and a small evacuation from the bowels. Pulse 102. Tongue moist and clean, and gentle diaphoresis. Has still much pain in the back and stump, and some pain over abdomen, which is tender on pressure. Ordered an enema of castor oil ℥j, and flaxseed tea Oss; and to be repeated if not effectual. May take barley water, chicken broth, and toast. *Evening.*—Has had a free passage from the bowels, and feels a little better. Has slept some through the day. Pulse 106. If restless and in pain to take acetat. morph. p. r. n.

Saturday.—Slept some during the night, and is more free from pain. Tongue clean and moist, and pulse 100. Continue same nourishment. *Evening.*—Suffers still less pain in stump and back, but skin hot and dry. No inclination to sleep. Pulse 108. Ordered Pulv. Doveri gr. v., and to be repeated p. r. n.

Sunday.—Rested by dozing through the night. Tongue still looks well, and pulse 106, with gentle diaphoresis. *Evening.*—More tranquil; though pulse 112. Having had no evacuation since Friday, ordered sulph. sodæ ℥i to be taken early in the morning. If restless and in much pain, black drop gtt. xij.

Monday.—Has slept tolerably well through night. More tranquil and more free from pain. Tongue slightly furred in centre, but moist. Pulse 108, and soft. Continue same diet, and ordered an enema, the purgative not having had the desired effect. *Evening.*—Has had two dejections. Slight diaphoresis. Pulse 110, 112.

Tuesday.—Has slept well. Tongue and skin moist, and pulse 98. Wound has united throughout, except a small opening at inferior angle, where the ligatures pass out, and from which a healthy, though slight, discharge of pus takes place.

The patient's condition daily improved after the first week, the minutes of which are here given. And he recovered entirely, and left the Infirmary in about seven weeks well, and having become quite stout before his departure. I attended him for an attack of gonorrhœa soon after his return home.

I have given a report of this case, as possessing, I think, some interest, from a combination of the two diseases in the same bone, viz., extensive necrosis of the shaft with articular caries, and destruction of the joint; both evidently the result of a strumous habit. On account also of the amputation itself, which was performed high up, the bone being divided near the trochanter minor; but more especially as fairly illustrating, when compared with Case I, the great importance of preventing by an anæsthetic agent, the shock of a severe surgical operation upon a debilitated frame.

In Case I, the patient was thoroughly etherized, and it is a remarkable fact that the pulse, which was counted accurately a short time after the amputation, and after the effects of the ether had subsided, was precisely the same in frequency as it was a few hours before the operation took place; in both instances being 102. The man's system had, in fact, been subjected to no shock, and his condition and appearance did not indicate that he had undergone the most severe of all surgical operations. I have no hesitation in attributing, in a great measure, the success in this case to that greatest discovery and blessing of modern surgery, etherization; for I do not believe the patient could, in his prostrated state, have sustained the shock that would have occurred from amputation at the hip-joint; the removal (in his case) of more than one fourth of the system.

In Case II, no anæsthetic agent was used, as this discovery had not been made at the time the amputation was performed; and although the patient was a younger man and less enfeebled by disease, and the operation itself less formidable, yet its immediate effects were such, from the severe shock to the system, as to excite the strongest apprehension of an early and fatal issue, which, fortunately, however, was not realized.

CASE III.—*Compound Fracture of the Leg.—Tetanus.—Amputation of the Thigh.*—C. Fitzgerald, aged 20, was brought to the Infirmary on Saturday evening, December 31, 1850.—On Thursday the 29th, at about 2 o'clock, P. M., he fell from a scaffold, and in the fall was struck on the leg by a heavy piece of timber, which produced a very bad compound fracture of both bones of the leg. A lacerated and gaping wound extends from the tubercle of the tibia six inches downwards, exposing the bone in the greater part of its extent, with great contusion of the soft parts.

The tibia is comminuted, and, at the time of the accident, the upper fragment projecting from the wound, about an inch of it was removed by a physician in the country, in order to effect reduction. A considerable piece of the bone was also picked up from the ground where he fell. When brought to the Infirmary he was suffering extremely, having been conveyed thirty miles from the country on a litter.

His friends were informed that there was no prospect of saving the limb, but that he was then in no condition to undergo amputation. He was at once placed under the influence of chloric ether, and thus without pain removed from the litter to his bed, and the limb rendered as comfortable as possible by splints loosely applied, a light poultice and the swinging apparatus. Pulse 112, 114; jerking and full. Ordered an opiate every hour and a half until composed.

January 1*st. Morning.*—Has passed a tolerably good night. Pulse more calm, 100. Ordered sulph. magnesia ℥ss, and cold water dressing to limb. Light broth for nourishment. *Evening.*—Pulse 100, full and jerking. Bowels have been opened, but skin hot and dry, and restless. Ordered ℞. Liq. acetat. ammon. ℥ij; spt. æther nitros. ℥i; sol. citrat. morph. ʒi. M. Three teaspoonsful every two hours till composed. Lemonade for drink.

2*d. Morning.*—Passed a comfortable night, and countenance looks better. Pulse 88, soft, and skin moist. Continue chicken water and tea and toast for nourishment. *Evening.*—Pulse 94, 96, and more febrile. Ordered same mixture as was prescribed last evening, to be taken every two hours till composed.

3*d*. *Morning*.—Has passed a good night, sleeping well, and feels much better. Pulse 90. Ordered sulph. magnesia ℥ss, and continue same diet. *Evening*.—Has had no operation from the purgative. Pulse 100. Ordered an enema to be given early in the morning, if the bowels are not opened by that time. Composing draught to be given and repeated, if it does not produce sleep.

4*th*.—Slept well, and has had a good evacuation from the bowels. Pulse 84.

5*th*.—Passed again a good night, and wound discharging freely. Pulse 75. Has had a natural stool. Being restless toward evening, ordered composing draught.

6*th*.—Feels quite comfortable, and pulse 75.

7*th*.—Has passed another good night, sleeping well. Pulse 76.

I had decided on removing the limb to-day, but the morning being very tempestuous, I concluded to defer the operation until the morrow. On asking, however, to look at his tongue, I found that he did not protrude it as well as usual, and on requesting him to do so, he said he could not open his mouth so well. I questioned him particularly, to ascertain when he had *first* discovered this difficulty. He is very positive that he first observed it at breakfast this morning; say about three hours prior to my visit. There is no pain or tenderness about the epigastrium, and no muscular rigidity anywhere, except that alluded to. There is some soreness about the condyles of jaw, when he attempts to open the mouth.

I decided on immediate amputation, as it was a fair case to test its effect in a case of threatened tetanus, from the short time that the symptoms indicating it had become manifest. But at the same time, my entire disbelief of its efficacy in arresting this disease, was fully stated to the class.

The patient was thoroughly etherized, and the thigh then removed at its lower third by the lateral flap operation. Though placed completely under the influence of chloric ether, and totally insensible to pain, it was yet observed that there was not the least relaxation of the jaw during, or after the operation. The patient was removed to his bed from the amphitheatre, in a state of complete anæsthesia, in which condition he continued for fifteen minutes, or more, after his removal. On awakening, he said he was entirely unconscious that the limb had been amputated, but he now complains of great pain in the leg. The stump was not permanently dressed for a couple of hours, being simply closed and covered by a wet towel. No hemorrhage having occurred from it in this interval, it was brought together by one suture and adhesive plaster, and the water dressing applied to it. About eight ounces of blood were lost in the operation.

The difficulty of swallowing, and of opening the mouth, increased rapidly after the amputation, and the pain in the leg also grew more severe, and I have never seen a case of tetanus so rapidly and violently developed as was this. He was again etherized, and tinct. opii given to him in large doses, and in succession, all the most active remedies, including the tobacco enema, and the cannabis indica, were resorted to. Great pain and rigidity about the epigastrium soon took place, with violent spasmodic action of the voluntary muscles, which quickly resulted in complete opisthotonos. At nine o'clock in the evening, he could not swallow anything, and the spasms occurred every half hour, with horrible distortion of the features, and profuse perspiration. In the morning, the spasms had increased in frequency to every ten minutes, and the body was completely bowed backwards by them. Nothing seemed to give him the least relief, and he died at 11 A. M., terribly convulsed, but with his mind clear to the last moment, only twenty-four hours after the amputation of the limb.

Few surgeons, I presume, have much confidence in amputation, as a means of arresting acute and traumatic tetanus, as the results in such cases have been generally unsuccessful; and yet, I felt justified in the above case in resorting to it, for amputation of the limb had already been decided upon before any symptom of tetanus had occured, and the disease being in its incipient stage, it afforded me an opportunity of fairly testing a measure, which has been tried and sanctioned by high authority, both in military and civil surgery. So far from mitigating the disease, it seemed to hurry it on with frightful rapidity to a fatal termination; for, as I have remarked, before the operation the symptoms were very slight and incipent, whilst after it, they were in a few hours at their acme, and so intense as to produce death in an unusually short time.

In regard to the influence of anæsthetic agents over this disease, I believe their effect to be only transient and mitigating.

I had already, before the occurrence of the present case, fairly tried chloroform in acute tetanus, but with no other effect than a mere temporary suspension of the spasm, its return invariably taking place as the anæsthetic influence subsided; and I am inclined to believe that those cases of tetanus which have been occasionally noticed, as having been successfully treated by chloroform or ether, belong to the chronic or idiopathic form, which, we know, not unfrequently terminate happily, when only the ordinary remedial measures are used.

I could make no autopsy of the case, as the friends removed the body to Baltimore for interment.

CASE IV. *Idiopathic Mortification.—Amputation of the Legs.*—T. Ingraham, coloured, aged 34, waterman, entered the Washington Infirmary on the 1st of December, 1849, with both feet in a state of mortification. From the natural stupidity of the man, it is difficult to ascertain much of the preceding history of his case. He states, however, that he was attacked with cholera in the latter part of the summer (the month of August), which left him in a very weak condition. That in the latter part of September he first noticed small discoloured spots on the toes, which gradually enlarged until both feet became almost entirely covered with them. He admits that he has been a regular drinker; in fact, from his own account, I think he has been decidedly intemperate in his habits. Before he was brought to the Infirmary he was living in a low hovel, deprived of the common comforts and necessaries of life. The disease has extended equally in each foot, that is, to about an inch from the malleoli, where its progress has been arrested, and where the sulcus of demarcation between the dead and living parts is distinct and well marked. The sloughing is uniform, every portion of the feet below the line of elimination being in a state of complete sphacelus. The mortification is of the humid form, and the discharge is free. There is great pain in the extremities; his pulse is rapid and feeble, 120 to 125 in the minute; and the tongue is coated with a brownish fur. From the free and long-continued discharge and want of rest, he is much exhausted, and evidently not in a favourable condition to undergo amputation.

He was at once ordered a nutritious diet (beef soup) to be taken freely, and one of the following powders every four hours in two tablespoonfuls of brandy: ℞. Ammon. carb., quiniæ sulphat., g. camph. āā grs. ij. M. An opiate at night to ease the pain and give him sleep. To the feet flaxseed poultices. Under this treatment his condition improved in a short time; the pulse becoming stronger and less frequent, and his rest at night less disturbed. On the 4th of December I removed the left leg a little below the point of election. He was thoroughly etherized for the operation, and in order that he might lose as little blood as possible, which he could but poorly afford to spare, the artery was compressed by a tourniquet applied in the popliteal space.

The limb was amputated by the double flap method, the principal flap being cut from the posterior part of the leg, and a small one in front.

The patient was unaffected by the operation, being anxious to know which limb had been removed, when recovering from the anæsthetic state.

I deemed it most prudent to defer the amputation of the other leg for a few days. It was, therefore, postponed until the 11th, seven days after the first operation. It was then removed at exactly the same point and with the same precaution as the first. The patient's condition improved rapidly after the amputations, and both the stumps were healed by the 8th of January, 1850. During the after treatment, the brandy and powders given when he first entered the Infirmary were taken by him regularly three times a day. He left the Institution on the 23d of February well and able to move upon the stumps, which have since remained perfectly sound, and enable him at present to go about with considerable facility.

An examination of the parts was made by my request soon after they were removed; at which, however, I was unable to be present, and the gentleman who made the examination then attached to the Infirmary, soon afterwards left Washington for a distant residence. Unfortunately, not having received from him, before his departure, notes of the state in which the arteries were found, I am unwilling to trust to my recollection the verbal statement which was made to me.

But there is no doubt the mortification was produced by a depressed and vitiated condition of the vascular and nervous activity in the limbs, inducing inflammation of a low type.

The man was intemperate in his habits, and had been very much prostrated by a severe disease; add to this improper and insufficient nourishment, and a deprivation of the ordinary comforts and necessaries of life, and we have all the elements requisite to vitiate the blood, and to induce in the vessels through which it circulates inflammation of a low grade, *inflammatio debilis,* as it has very properly been called; which, by obstructing the passage of the blood through the more remote and naturally weakest points of the system, would easily account for their death.

Under such circumstances it was to me a matter of some surprise, that the healing of the stumps progressed so well; for in a little over a month they had entirely healed, with the exception of a very small point on one of them, which in a short time afterwards firmly cicatrized.

No doubt the nutritious and tonic treatment upon which he was at once placed on entering the Infirmary, with a return to the stimulus to which he had been so long habituated, aided materially in producing this result; and it will be recollected that this treatment was continued until entire cicatrization had taken place. The disease was already arrested by nature when he entered the Infirmary, and the work of elimination, as I have stated, had commenced, but in all probability before it could have been half completed, the patient must have sunk from the constitutional irritation attendant on it.

CASE V. *Traumatic Mortification.—Amputation at the Shoulder-joint.*—On the 29th of December I was called on to visit W. B., who had been very severely wounded on the day previous, between twelve and one o'clock, by a fowling piece loaded with a heavy charge of duck shot. The muzzle of the piece was very close to the man at the time it was fired, and the entire load entered about the middle of the left forearm, lacerating the muscles in a shocking manner, exposing both the radius and ulna, and making a wound three inches or more in diameter. It then passed up, entered the inner side of the arm, dividing, as I judged, the brachial artery and large nerves accompanying it, to within two inches of the edge of the axilla, and causing another wound, of at least four inches in length.

The patient was not seen by me until twenty-four hours after the receipt of the injury, as he had been brought forty miles from the country, and he had lost, I was told, a great deal of blood. The hemorrhage had, however, ceased spontaneously, as occasionally happens in gunshot wounds, even where a considerable artery is severed.*

The expression of his countenance was very pale and the features pinched, and he was very restless, with a feeble and rapid pulse, 125 to the minute. The forearm was cold, pulseless and livid in colour, and the arm was also discoloured, its temperature less than on the opposite side, and much swollen. In fact there was no possibility of getting a flap from any part of the arm that was not already doomed by gangrene, rapidly spreading and intense in its action, except about the deltoid region, and amputation at the shoulder-joint I was at once satisfied was *promptly* demanded.

Upon this opinion being communicated to the patient and his friends, a consultation was asked for, which was of course acceded to.

Doubts being expressed by one of my friends who was called in consultation, of the propriety of immediate amputation, the patient positively refused to submit to it; and I left him, satisfied that any delay (even of a few hours) would be fatal to him.

On the next morning (the 30th) I received a summons from the patient in haste. I then found him not only willing but most anxious to have the operation performed, for he said that he felt convinced that unless the limb was removed he must die, and he begged me to amputate it as soon as possible. The forearm had now become much darker in hue and was very cold, and the coldness and discoloration of the arm had also much increased since my visit the day before. When pressed there was a crackling sensation felt under the finger, and the discoloration and numbness had partially extended to the deltoid region. In fact I feared that gangrene had already invaded the only point from which I thought I could obtain a proper flap at my last visit. The pulse was still 125, and the poor fellow had passed a sleepless night in great suffering. I stated to the patient's friends my belief that the time had passed for amputation, but as he still continued most urgent to have it done, I decided on giving him the benefit of the slender chance that remained.

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* "If the artery be completely divided, a considerable quantity of blood is quickly lost, and the patient may also die. But, in general, syncope or a state nearly allied to it supervenes, and the hemorrhage ceases spontaneously. The same thing occurs where a limb is carried away by a cannon shot, and proves the safeguard of the patient's life; for serious and destructive bleeding has ceased, in most cases, before a tourniquet can be applied; and, indeed, in the greater number of cases they are of no use whatever, for after the hemorrhage has been spontaneously suppressed, it does not in general return; and whenever it does return, the patient's life will certainly be lost, unless proper and effective assistance be at hand."—*Guthrie on Gunshot Wounds, from Chelius, by South,* vol i. p. 372.

He was accordingly raised in a chair to a proper position, but he immediately fainted. He was at once placed in a recumbent position again, and brandy and water given to him freely. Having rallied in the course of an hour, he was again raised and held firmly in a chair, and the limb was then removed at the shoulder-joint by Lisfranc's method, as follows: The arm being raised to nearly a right angle with the body, a catlin of medium size was introduced from behind under the edge of the latissimus dorsi muscle (just where it forms the posterior boundary of the axilla), and its point pushed out between the acromion and coracoid processes of the scapula, and a flap about five inches long was then cut downwards and outwards. This being then drawn well upwards by an assistant, the arm was now depressed towards the side, and the knife was carried lightly across the capsular ligament, when the head of the bone starting from the glenoid cavity, the knife was passed behind it, and a flap cut from the inner side corresponding in length to the outer one. In cutting the last flap the edge of the knife was kept close to the bone, so that the brachial artery was not touched until just as the flap was terminated. This enabled the assistant who retracted the first flap (Prof. Johnston) to catch the artery, by passing the hand back of the knife *before* it was divided, as in the amputation at the hip. The hemorrhage was thus securely commanded, and very little blood was lost.

I have mentioned in detail this operation of Lisfranc's for amputating the shoulder-joint, as being, I think, far preferable, both in its performance and its results, to any other method that has been proposed. It may be truly said to be instantaneous, so rapidly can it be executed, and the manner of commanding hemorrhage is so certain that previous compression of the artery above is entirely unnecessary, provided the surgeon can rely on his assistant.

It was observed that there was no contraction of the muscles as they were divided, and that a small quantity of pus oozed from the edge of the external or deltoid flap. The operation was performed about fifty hours after the patient was wounded. He seemed to be much more comfortable after it was over, and said he felt much relieved. At 6 P. M. his pulse had fallen to 106, and he was calmer and in better spirits. An opiate was ordered for him.

On the next morning he appeared to be still better, having passed a quiet night, and his pulse and skin being in a better condition, I felt somewhat encouraged in his case. I did not examine the stump until the third day after the operation, and I then found that my fears for its condition were very soon to be realized. There was no appearance of adhesion in any part of it, and the edges were swollen, puffy, and livid, and the patient evinced very little feeling when it was handled and examined. It was evident that gangrene had attacked it. The discoloration extended rapidly towards the trunk, and the entire flap was soon involved. The man gradually sunk under its extension, and died on the fifth day after the operation, about sundown, leaving me strongly impressed with the belief that amputation twenty-six hours sooner, and when first proposed by me, would probably have arrested the disease and have saved his life.

The case is a convincing proof of the danger of delay in traumatic gangrene when it is approaching the trunk. Unlike the spontaneous form, its march is too rapid for hesitation. The postponement of action, even for a few hours, may be fatal. I believe it to have been in the present instance. If the surgeon desires time to decide, that time, though brief it be, may decide the fate of his patient.

It will be remarked that in three of the above cases anæsthesia was resorted to, while in the other two it was not. This agent not having been introduced when the two operations referred to were performed, will account for this; for, from the experience which I have had with etherization in surgical practice, I can truly say I would as soon think of amputating the thigh without previously compressing the main artery of the limb, as to perform a difficult or dangerous operation without previously putting the patient in an anæsthetic state. Nay, I am prepared to say further, that so important an element is it to the success of the surgeon, that he ought to decline any operation of magnitude and danger, should he meet with a refusal on the part of his patient to be subjected to its influence.

Fortunately there are few who are not only willing but anxious to be soothed by the magic spell which to the victim robs surgery of nearly all its terrors, and to the surgeon brings pleasure from the knowledge that he inflicts no pain.

Since November, 1848, no other agent for inducing anæsthesia has been used by me but chloric ether, and I want none better. My acquaintance with sulphuric ether and chloroform, when they were first introduced, was by no means satisfactory, owing to my not using either of them with that freedom requisite to produce their effect; and I, therefore, abandoned the subject of anæsthesia entirely. But at the period just mentioned, on my return from a visit to Boston, I was induced to use chloric ether from a conversation upon its merits which I had while there with Drs. J. M. Warren and Hayward, and its qualities for certainty and safety as an anæsthetic agent, as stated to me at that time, by those gentlemen, have since been fully realized by me.

For nearly three years it has been constantly used by me, and most liberally whenever demanded, both in hospital and in private practice, and it has never in a single instance disappointed me.

I have given it at all ages, from the tender infant to the old and infirm man, and from a few moments to more than an hour at a time, and it has in my hands never failed to produce the desired effect, nor been followed by any unpleasant result.*

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* The ether which I have used has always been prepared by Wm. B. Little & Co., Boston.

I could not close these remarks upon operations, in which it has borne "so conspicuous a part," without rendering my feeble tribute in praise of the greatest boon that has ever been conferred upon suffering man in the annals of surgery.

WASHINGTON, *July 18th*, 1851.

ART. III.—*On a rarely observed, but very fatal Effect of Gastro-intestinal Revellents; especially of the Tartrate of Antimony and Potassa, and particularly in the treatment of Pneumonia.*—By WM. M. BOLING, M. D., of Montgomery, Alabama.

THERE are but few articles of the Materia Medica which exercise so certain a control over any serious morbid state or action, as the tartrate of antimony and potassa does, over inflammation of the pulmonary parenchyma. Its efficiency, I may say, is universally admitted. Unfortunately, however, its value as a remedy in pneumonia, or any other disease indeed in which its protracted use may be required, is diminished by the circumstance of its occasioning in many instances, violent disease of some of the abdominal viscera, which often leads to a fatal result. It is in pneumonia, however, according to my own observation, that the effect referred to is most frequently produced by it, and developed in the most violent and rapid manner; probably, it is but reasonable to suppose, because in this disease its protracted administration is more frequently practiced than in any other. As generally administered, it is not improbable, that the remedy, even in cases in which the ultimate result may be favourable, produces by its contact, more or less irritation of the gastro-intestinal mucous membrane, which gradually subsides, after its suspension, during convalescence. Its visible effect upon the skin, when used locally, might lead to such an inference, and indeed appearances somewhat analogous to this are sometimes observable, not only after death, in the gastro-intestinal mucous membrane, but during life, in the mouth and fauces, as a result seemingly of its use. In fact it is to a revellent effect, resulting from this local irritant action, that its efficacy in pneumonia and other diseases, is attributed by the advocates of the physiological doctrine. It is not, however, this local action, *merely as spoken of and described by the generality of writers*, to which it is my object to call attention at present, but more particularly to an array of symptoms of a much more violent and sudden character, connected seemingly with a metastasis of morbid action, from the thoracic (when administered in the diseases of this cavity), to the abdominal viscera; the result, it may be, of an exaggerated influence of the character mentioned.

Whatever the correct explanation, however, as to the mode in which the effect is produced, the condition itself is one of extreme danger.

There is reason to believe, however, that though in the treatment of pneumonia, the state in question is more frequently induced by the use of tartar emetic, than by anything else, a similar condition is occasionally brought about by other agents administered to such an extent as to produce a high degree of irritation of the gastro-intestinal mucous membrane; and I believe that it is with more certainty developed, under a combination in the treatment, of calomel with the antimonial, than by the latter alone.

Supposing the remedy to have been continued several days, the phenomena referred to, are developed much in the following manner. The patient may seemingly be doing well under the continued use of the remedy; the dulness on percussion, and the frequency of the pulse diminishing; the skin perhaps becoming moist, and the respiration improving. Suddenly in some cases, in others somewhat gradually, the patient becomes restless, the thirst is augmented, the discharges from the bowels are more numerous and thin, the abdomen becomes tympanitic and perhaps tender, the tolerance is lost, and though he may not have done so for several days, he vomits, or makes frequent efforts to do so; the tongue becomes dry and pointed; there is jactitation present, anxiety of countenance, delirium, and perhaps stupor a short time before death. Occasionally jaundice supervenes, and in a few cases the matter vomited bears a close resemblance to that ejected in yellow fever. During the progress of the change, the pulse becomes more frequent, hard, concentrated, small and thready.

The rapidity with which the symptoms mentioned are developed varies a good deal in different cases. I have known instances in which death has taken place in about six hours from the time of the first evident unfavourable change; in every respect, up to that time, the progress of the case being apparently favourable, and the graver symptoms subdued. Oftener the case is protracted to ten or twelve hours, and sometimes to a longer period.

Simultaneously with the changes above spoken of, or, as it were, preceding them rather, a more or less rapid disappearance of the signs and symptoms of the primary disease takes place. From a state of almost complete solidification of an entire lung, with dulness on percussion, and bronchial respiration; in the course of four or five hours, I have found the pulmonary tissue permeable, and the chest resonant and yielding a healthy respiratory murmur; a corresponding improvement in the cough, thoracic pain, difficulty of breathing, &c., proceeding at an equal rate. The rapidity with which this change in the condition of the lung takes place is proportionate to the violence and rapidity of the newly developed abdominal disease.

In any case of pneumonia under the antimonial treatment, although the patient may seemingly have been doing well, the supervention of the slightest tympanitis, with augmented thirst and a tendency to diarrhœa, may be regarded with suspicion, as the probable precursors of a very grave condition;

and I am now led to regard my patient's doom as almost settled, when, in addition to these symptoms, there is a *rapid* instead of a gradual removal of the dulness on percussion, *unattended with the crepitant rale of resolution.* Where a case is closely watched, the latter will be found to precede somewhat the former symptoms of the progressing change; and I have more than once surprised, not only the relatives of patients, but professional gentlemen in attendance with me, by announcing a coming change for the worse, basing my opinion on the physical sign just stated, where everything otherwise seemed favourable; the patient comfortable, and apparently, perhaps, convalescent.

This termination of pneumonia, under the administration of antimonials, especially when given in what would be considered anything like adequate doses by the advocates of the doctrines of Rasori, I am led to believe cannot be of very rare occurrence in the south; for I think that I have seen almost as many patients die of the superinduced or substituted affection as of the primary. And yet the largest quantity for the twenty-four hours, in which I have been in the habit of prescribing the tartrate of antimony and potassa, falls far short of what would be considered a medium dose for the same time, by the generality of physicians of the contrastimulant school. Under the supposition, however, that it not unfrequently occurs, it is somewhat strange that we find so little in the works of authors who have written on pneumonia, especially as treated with antimony according to the contrastimulant doctrine, in which anything like a distinct reference is made to it, much less an accurate account of the condition. Neither in the French nor Italian writers of the contrastimulant school accessible to me have I been able to find any account of it, though in many we find allusion to the mere local irritant action of the agent in question upon the gastro-intestinal mucous membrane. This is more especially, however, the case among the advocates of the physiological doctrine, by whom the curative influence of the remedy in question, in pneumonia, is ascribed to a revellent operation. The condition spoken of by the followers of Rasori as a loss of the tolerance, resembles it in many respects, and I have sometimes suspected that in their descriptions they may have had in view a state identical with that to which I now have reference. If so, however, their delineation is incomplete in several important particulars; and I would especially mention the sudden subsidence of the original disease, with the occurrence of the new train of alarming symptoms. Moreover, no one, I imagine, who has ever observed a well-marked case of the state to which I have reference, even under the influence of a favourite doctrine, could see in it *merely* a general depression of the vital powers somewhat below the standard of health; and, in short, could suppose that the phenomena manifested were not the consequences of actual local lesion of the viscera of the abdomen.

I have been disappointed in not finding an account of it in such of the writings as I have met with, of the Italian followers of Rasori; because, not only from the immense doses in which they are in the habit of administering the antimonial preparations, but from the similarity of their climate, and diseases generally to our own, in their hands especially, I had been led to suppose it must frequently occur. Owing to the fact, that in the north, the susceptibility of the gastro-intestinal mucous membrane to irritant impressions is less than in the south, it probably occurs less frequently there than with us. One rather mild, but unquestionable case, I find recorded in the *American Journal of Medical Sciences* for April, 1848, by J. F. PEEBLES, M.D. of Petersburgh, Virginia, in a paper calling attention to certain unfavourable effects of tartar emetic. Two other cases are given by B. R. JONES, M. D. of Montgomery, Alabama, in the *New Orleans Medical and Surgical Journal* for September, 1850; in which he particularly refers to it as a result of the operation of antimony.

My own attention, several years ago, was forcibly drawn to this unfavourable action of the tartrate of antimony and potassa, in pneumonia especially, and it was alluded to in a paper on "the treatment of the inflammatory affections of malarious districts," which I published in the *American Journal of Medical Sciences* for July, 1844. Two cases are there given, among others of a different character; and, in regard to one of them, the following remark is made. "In this case, an occurrence took place, which is by no means unusual with us here, in the treatment of acute thoracic diseases, particularly when tartar emetic or calomel is used to any considerable extent, and more especially when they are used in combination; viz., the supervention of gastro-enteritis about the time, or *soon after a considerable amendment has taken place in the original disease.*"

But, though I have been able to find nothing, or but little, that can be regarded as having allusion to the accident in question, where most I expected to find accounts of it, viz., among authors of the school of Rasori, in speaking of the use of tartar emetic in pneumonia, a graphic description of a similar state produced by the continued administration of calomel may be found in the work of Golis on hydrocephalus. "Many times," he says, "I saw, under these large and long-continued doses of calomel, the hydrocephalic symptoms *suddenly* disappear, and inflammation of the intestines arise, which terminated in death. Still oftener, I have observed this unfavourable accident, from an incautious use of calomel in croup; viz., where all the frightful symptoms of this tracheal inflammation, which threatened suffocation, would *vanish suddenly*, and enteritis develop itself, which passed rapidly into gangrene and destroyed the patient."*

Although it is probable, that it is through a local irritant action of the antimonial upon the gastro-intestinal mucous membrane, that the effect in question is brought about; the manner, and circumstances of its development lead not unreasonably to the inference, that a real metastasis takes place; that in addition to that irritation, which the remedy, probably, in almost every instance produces, where it is long used; that, for instance, which it would produce in a healthy subject; there is a superadded morbid action, transferred upon the abdominal viscera, in lieu of the pneumonia, which has suddenly disappeared. It will be remembered, that, generally, it is not till after a partial subsidence of the pneumonic symptoms, that evidences of the gastro-intestinal irritation are manifested. It partakes, then, more of the character of metastasis than revulsion, though an irritant action may have determined it.

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* Davis on Acute Hydrocephalus.

Why the morbid action, from which the patient was, probably, to all appearance in no great danger, in the lungs, should prove so frequently fatal when transferred to the abdominal viscera, is a question which naturally suggests itself. Perhaps it may be the suddenness of the invasion. Perhaps the translated morbid action, operating in conjunction with a morbid state, which had already been developed in a high degree in the gastro-intestinal mucous membrane by the remedy, but which, up to the moment of the metastasis, had remained latent, in consequence of the preponderance of the pneumonic inflammation. Perhaps, a greater depression of the vital powers results from an equal degree of morbid action in the gastro-intestinal mucous membrane, than in the pulmonary parenchyma.

Notwithstanding this occasional unfavourable influence of the tartrate of antimony and potassa, I have felt reluctant to dispense with its use entirely in the treatment of pneumonia, in which, otherwise, its efficacy is so great; and, for some time, it has been an object with me to devise some plan of administration, by which, while its favourable operation might be secured, the former effect might be entirely, or in a great measure avoided.

Without entering into any detail or discussion of the various and somewhat contradictory views entertained by different physicians, or sects of physicians, as to the modus operandi of the tartrate of antimony and potassa, I think it may at present be safely assumed that, while its sedative or contrastimulant influence is exerted, after its absorption and commixture with the circulating mass, the unfavourable effects resulting from its administration, to which reference is here made, are consequences of its direct local action upon the gastro-intestinal mucous membrane. To be sure, according to experiments of Magendie, it would appear that its *emetic* operation is secondary to its absorption, and the result of a special affinity for, or action upon, the stomach, while in its transit through the vascular circle; but it would seem a visionary refinement in toxicology, to refer the effects of which I have been speaking to an influence thus exerted, aware, as we already are, of its irritant action upon the mucous and dermoid tissues, when locally applied.

It is not at all improbable, however, that in some rare cases, the revulsive operation of the remedy on the gastro-intestinal mucous membrane may prove favourable, according to the views of Broussais; but, knowing as we do, that other gastro-intestinal revellents exercise no such special control over the phlegmasiæ of the thoracic viscera, as the agent in question, as a general rule, his explanation of its modus operandi will, I am inclined to believe, be deemed incorrect. On the contrary, when the local effect on the gastro-intestinal mucous membrane is developed in any considerable degree, recovery, even when it follows, is retarded rather than advanced by the circumstance; not only by the additional febrile disturbance, but by the diminished absorption which results in consequence; and that when it occurs in a high degree, it occasions in pneumonia the train of alarming, and so often fatal phenomena.

Assuming then that the sedative effect of the remedy through which its curative influence in pneumonia is brought about, is produced by that which is absorbed; and the deleterious effects under consideration, by that which, remaining unabsorbed, or which is not for a considerable time absorbed—remains long applied in contact with the gastro-intestinal mucous membrane—by what indeed may very properly be deemed a redundancy of the article—that over and above what can be readily acted on by the absorbents, it is manifest that to secure the former and avoid the latter, no more of it should be prescribed than it is probable will be promptly taken up by these vessels, and its administration regulated in such a manner as best to secure this end.

With this object in view, I at first commenced to diminish the dose, although in no case had I ever given it in anything like the quantity recommended by many physicians of the contrastimulant school; nor did I find the efficacy of the remedy less when I had fallen back upon about the quantity advised by many before the rise of the contrastimulant doctrine: say three, four, or at most six grains in the twenty-four hours, than when I gave it in doses twice or thrice as large; but its mischievous effects were infinitely less. It does not necessarily follow because in many cases the larger doses of the ultra contrastimulists are tolerated for the time, and generally without any manifest ulterior mischievous effects, that they are really required.

Besides this reduction of the dose, say for the twenty-four hours, to the smallest possible quantity capable of producing a sedative influence, I have also adopted the plan of giving it in small portions, frequently repeated, so that not more will be swallowed at a time than may be promptly, at once indeed, acted on by the absorbents, rather than in larger portions at longer intervals, by which the mucous membrane would be of necessity subjected to a longer contact with a part of each portion swallowed. The method has seemed to me a bad one, of giving the quantity intended for the twenty-four hours at lengthened, though equally divided intervals throughout this period; but still worse the plan followed by Laennec, in some cases, of giving the entire quantity intended for the twenty-four hours, in but three or four portions, at short intervals, and then omitting it for the remainder of the day. By this method the local or revellent influence of the remedy is induced in the highest possible degree, while the sedative influence is obtained in a degree, perhaps, proportionably lessened. Generally, I give from three to six grains, according to the extent of the inflammation and the grade of febrile excitement present, in the twenty-fours, dissolved in six ounces of water. Of this solution, I give, during the day, a teaspoonful every half hour; but, if the patient is disposed to sleep, that his rest may not be too much disturbed, twice the quantity every hour during the night. I have not found, as we are led to believe would be the case by some of the followers of Rasori, that the tolerance of these smaller doses is less readily established than of the larger. In some cases, where the attack is violent, in connection with blood-letting and other appropriate measures, with the view of bringing the system as speedily as possible to some extent under the influence of the agent, I venture to give at first one or two doses, say of a third or half a grain each, of it. To favour its rapid absorption, by all means the remedy should be administered in perfect solution, in water alone; and the plan of administering it in combination with mucilage, as of acacia, flaxseed, elm, &c., is eminently calculated to lead to the result it is intended to obviate. Instead of sheathing the gastro-intestinal mucous membrane, or at least of protecting it in this way against the local irritant action of the remedy, such substances favour the latter effect, by retaining the salt for a long time in contact with the mucous surface, in consequence of the obstruction to its ready imbibition, which they present. That absorption should take place, it is manifest that contact is necessary; consequently, nothing can be gained by placing either the absorbing surface, or the remedy to be absorbed in such a condition as to protract the process. Neither do I think the plan is a good one, of giving such fluids in the intervals; though from the universality of the practice, popular prejudice is so strongly set in its favour, that the physician who prohibits them entirely, is in danger, in case of a fatal result, of censure from the patients' friends, for the omission. The pilular is also a very objectionable form of administration; being calculated to lead to a slow absorption, and a protracted contact of the remedy, with a limited portion of the gastro-intestinal mucous membrane; favouring thus a concentrated local action, and the development rather of its topical irritant, than of its general constitutional influence. The form of administration in complete solution, in as large a quantity of water as it is probable will be entirely absorbed in the intervals between the doses, I regard as important.

Although I have had reason to be gratified with the method above recommended of administering the remedy in question in pneumonia, it is more than I am willing to assert, that its noxious operation can be thus, in all cases, entirely obviated.

More recently, with the same object in view, in some cases I have adopted the plan of administering the tartrate of antimony and potassa, in the form of enema, under the impression that its local irritant action upon the rectum, would be unimportant, in comparison with that on the stomach and duodenum; hoping the while, that in adequate doses its general sedative operation might be as well secured. In the use of the remedy, after this method in pneumonia, I generally give about three grains every third hour, with fifteen or twenty drops of the tincture of opium in an ounce or two of warm water; and its controlling influence, where the enemata have been well retained, has not appeared to me appreciably less, over the febrile excitement, and local morbid action, than when I have administered it by the mouth.

Although the results of my practice from this method of treatment have been highly favourable, one case stands on record in my case book, in which it was principally adopted, calculated to cast a doubt upon its invariable innocuousness. Determining in the commencement of the attack to treat the case principally with the antimonial enemata, I ventured—as I thought I might do with safety, having this intention in view, and as the attack was a very violent one—upon a more free administration of the remedy by the mouth, during the first eighteen hours, than is my common practice; and it is not improbable that it was to this, in conjunction with the action of mercurials administered occasionally by the mouth during the progress of the case, that the metastasis was in reality attributable. Still I could not entirely divest myself of doubt on the subject; but even admitting in this instance an unfavourable operation from the enema treatment, I still rest satisfied of its comparative safety, in contrast with the usual method of administering the remedy by the mouth.

In the case in question, up to the evening of the fifth day, the patient was apparently doing well; the febrile excitement regularly moderating, and the organic disease gradually subsiding. At this time, a *very slight* tendency to tympanitis was discoverable, and a more rapid removal of the thoracic dullness on percussion had taken place, than between any two of my previous visits. The patient expressed himself better, however, and the general symptoms were apparently favourable. It was consequently with no slight surprise on the part of the patient's friends, as well as of a professional friend who, on this occasion, visited the patient with me, that my intimations were received of a probable speedy fatal termination. The signs and symptoms of pneumonia rapidly disappeared; the tympanitis increased; diarrhœa, thirst, restlessness, jactitation, delirium followed by incomplete stupor of short duration, came on, and in ten hours from the time of the first symptom of the approaching change, he was dead.

ART. IV.—*Bernard's Recent Discoveries in Physiology.* Reported by F. DONALDSON, M. D., Baltimore, Maryland.

IN the previous number of this Journal, we called attention to, and we hope, by giving in detail his experiments, established, two of M. Claude Bernard's discoveries; the first, showing the existence of a communication between the portal vein and the vena cava ascendens, by means of which the kidneys secrete from blood which has not passed through the general circulation; the second, demonstrating that the liver has the prerogative, heretofore unsuspected, of fabricating, within its own proper tissue, sugar resembling very much the ordinary glucose, and in every particular the saccharine matter found in the urine and in other secretions of patients suffering with the disease known as diabetes mellitus. We now propose giving a brief account of the points in the process of *digestion,* which have been elucidated by the same physiologist; and then we will notice his investigations in regard to the *formation of fat* within the body, and independent of the alimentary materials.

There is, indeed, scarcely a department of physiology to which M. Bernard has not, by his experimental researches, made valuable additions; but that of digestion, from its great importance, has been his particular study, and to him, as we shall presently show, more than to any other living physiologist, do we owe the present advanced state of the science in regard to it; not even excepting Dr. Beaumont, the result of whose interesting experiments on the Canadian, Alexis St. Martin, have been so widely diffused.*

Bernard has had this advantage over Dr. Beaumont, that, whereas the latter could only experiment upon the action of the stomach and its secretions, he, by establishing fistulous openings into the stomach and into the ducts of all the secreting or excreting organs, has been able to carry his researches much farther. It was curious enough, to see walking about in the amphitheatre of the College of France, dogs and rabbits, unconscious contributors to science, with five or six orifices in their bodies, from which, at a moment's warning, there could be procured any secretion of the body, including that of the several salivary glands, the stomach, the liver, and the pancreas. The great value of M. Bernard's doctrines is, that they have been arrived at, not like those of many of his predecessors, from ingenious theories, but from actual experiments on the living subject, repeated over and over again, so that on many points they may be said to be demonstrated. Such, certainly, is the view entertained by all who have had the pleasure of witnessing them.

We cannot, of course, in the brief space of this article, enter as fully as we should wish into the phenomena of digestion, much less can we notice the various theories invented to explain them by the older physiologists, beyond what is necessary to render clear the points dwelt upon by our author. One cannot forbear remarking how much time, as well as genius, has been wasted in framing theories in explanation of conclusions drawn from imperfectly observed phenomena, and, indeed, in many cases perfectly independent of all ascertained facts. It has been too much the habit to form conjectures of what might take place in the economy, instead of endeavouring to find out from observation what actually does occur.—Nor was this error confined to men of the age of Hippocrates, who regarded digestion as the result of a *decoction,* nor to those who considered it severally as a *fermentation,* a *putrefaction,* or a *trituration.* Even many of the conclusions in physiology of Liebig, profound and ingenious as they certainly are, are worthless to science, for the simple reason that they are so purely theoretical, supported by little or no observation of the living functions themselves.

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* See Experiments and Observations on the Gastric Juice and Physiology of Digestion, by Wm. Beaumont, M. D., U. S. A.

Before coming to the more prominent points, we propose commencing, as did M. Bernard, with the *saliva* and its agency in digestion, and then proceeding in order with the other fluids connected with the preparing alimentary substances for assimilation.

We would naturally suppose that nothing could be easier than to ascertain exactly the office of a secretion which can be so readily procured from the mouth; and former observers had confined their investigations almost exclusively to the action of the mixed fluid there found. M. Bernard began his by inserting into Stenon's, Wharton's, and into one of the small ducts of the sublingual gland, small tubes, by means of which the several fluids making up the mixed buccal saliva could be examined separately. After which he produced a free flow from these ducts, by giving to the dog a piece of meat, the presence of which caused at once a free salivary secretion. What was most curious to observe was that, during mastication, the flow was almost entirely confined to the duct of the parotid and to the sublingual; whereas, during the motion of deglutition, when the tongue threw the bolus back into the pharynx, the secretion of the submaxillary was the greatest. Each separate secretion, as well as the saliva, as swallowed, was alkaline in its reaction, the acidity of the mouth during abstinence, which is owing to the secretion of the small buccal glands, being neutralized. M. Bernard remarked, he had always found that this, as other alkaline secretions, is best excited by the presence of acids, and the reverse is the case in regard to the acid fluids which flow most freely when alkalies are administered.

The physical characters of the several salivary secretions are very different; that of the parotid and sublingual glands is clear, and as limpid and thin as water, while that which comes from the submaxillary is thick and viscid, resembling in colour and in consistence ordinary simple syrup. From these facts M. Bernard has concluded that the mechanical use of these secretions is not the same—that of the parotid and the sublingual being principally to saturate the food, and thus facilitate mastication; the submaxillary, on the contrary, rendering easy the process of swallowing by its glutinous properties. In these, as in all his other investigations, he was not satisfied with the result of his first essay, but followed it up by others which confirmed it. He made an opening into the œsophagus of a horse, from which he drew the alimentary bolus as it descended, and on weighing it he found that by the imbibition of saliva it had increased elevenfold—showing what a large quantity of saliva was necessary. He next tied Wharton's duct, and found that it required forty-one minutes to masticate, so difficult was it, what previously had demanded only nine minutes; and the mass, when withdrawn from the œsophagus, was covered with mucus and a glutinous fluid, the interior was dry and friable, and the whole only increased in weight three and a half times. By giving freely of water to the animal to drink, it appeared to promote mastication almost as effectively as did the secretion of the parotid; the quantity of parotidian saliva being in proportion to the dryness and toughness of the ingested substance. If the ducts of the other two glands be tied, there is not the same difficulty in mastication. The water of the buccal mixed saliva is in the proportion of ninety-eight parts in a hundred, the other two being composed of the salts of potash and soda, and of the animal substance *ptyaline.* Thus it is shown that the mechanical use of the secretion of the salivary glands is very important.

In regard to its chemical action, it will be remembered, that Beaumont found that a piece of meat put directly into the stomach through the fistula, was digested fully as well as though it had been first subjected to the action of the saliva. From this fact, which has been repeatedly verified by others, it was concluded that this fluid had none other than its physical action on food. That this is a mistake, can easily be shown by placing cane sugar or any amylaceous substance in a test-tube filled with saliva, and applying heat of 98° Fahr.—when in a few minutes, and, according to Mialhe,* if it be powdered starch in solution, in less than one minute, there will be a transformation into dextrine, and then into grape sugar, and, if permitted to remain longer, into lactic and bituric acids. This may be easily tested by the addition, at the different stages, of the tincture of iodine to the solution—whereupon may be noticed the gradual disappearance of the blue of the iodide of starch, which changes at first to a rose, and then, owing to the complete alteration of the starch as such, the iodine is perceived to have no action at all. From these premises M. Mialhe was led to believe that, as the saliva, owing to a peculiar ferment, had that effect out of the body, therefore, such must be the case in the ordinary process of digestion, and concluded that this fluid completed the transformation of all that class of aliments; but Bernard has since proved the action of the saliva upon amylaceous matter to be very gradual, unless it is reduced to a powder, and is in solution; moreover, any acid placed in contact with it at once destroys its power, so that, as it cannot effect any change when it is mixed with the gastric juice, which is acid, the time is too short for it to have more than a very partial transforming power in the mouth and in the œsophagus. To establish this, M. Bernard killed a dog who had been fed upon potatoes, and, on opening the stomach, he found there the merest trace of sugar, but much unaltered starch, even in the mass passing through the pyloric orifice out of the stomach. This he thought conclusive of the point that, ordinarily, the saliva only acted mechanically in digestion, except in a slight degree upon amylaceous substances—nature having provided another fluid for the purpose of fitting this class of aliment, as well as fat and nitrogenized matter for absorption and nutrition. A singular fact, first noticed by M. Magendie,* and confirmed by Bernard, is, that neither the secretion of the parotid, nor that of either of the other glands separately, nor when mixed with each other, have any effect even upon amylaceous matter, but yet, that the mixed saliva of the mouth unquestionably has; from which it would appear that the active principle, whatever it is, that effects the transformation, must come from the small buccal glands. In diabetes, neither in the human subject nor as produced artificially in animals, can any trace of sugar be detected in the salivary secretion. We before noticed, that though the cyanide of potash administered by the mouth could be detected in the other secretions, yet it did not enter into the saliva.

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* See "Mémoire sur la Digestion, et l'Assimilation des Matières Amyloïdes et Sucrées. Paris, 1846."

The interesting question arises, as to what is the principle of the saliva, which, when permitted to remain sufficiently long in contact with starch, converts it into dextrine, sugar and lactic acid. Berzelius was the first to isolate, by the addition to filtered buccal saliva of six times its volume of absolute alcohol, an organic substance which he called *ptyaline.* Mialhe, in his memoir before the Academy of Sciences, maintained that the organic precipitate obtained by Berzelius and by himself, had properties analogous to the *vegetable diastase,* which in malt converts the starch into sugar, and that it should be named the *animal diastase.* There was no doubt that such was its action; but was it a substance of a peculiar nature existing only in the saliva? To test this, M. Bernard put other fluids of the body with starch, and, on raising them to the temperature of the body, found that many of them had exactly the same transforming power as the saliva. Such was the case with the water in which dried buccal mucous membrane had been soaked, showing, as he had supposed, that the ptyaline was derived from it. The serum of the blood, a liquid obtained from a cyst of the liver, the mucus from the nose in coryza, or indeed, from any irritated mucous membrane, had precisely the same effect. On giving a starch injection to a patient suffering with a diarrhœa, he found sugar in the stools, &c. From these results, M. Bernard concluded that the fermenting principle of the saliva was not different from some other nitrogenized matters in its action upon amylaceous substances.

The Gastric Juice.—At the commencement of his experiments upon this fluid, M. Bernard made before his class, an artifical opening into the stomach of a dog. He cut through the abdominal parietes in the right hypochondriac region, and, drawing out the stomach with a pair of forceps, he made an incision about an inch and a half in length, into which he introduced a short, wide canula, either end being terminated by a rim resembling very much a button. One of these ends being firmly clasped by the lips of the wound of the stomach, he was enabled to draw the organ near the surface, and fasten the other extremity of the tube to the integuments. A cork put into the external orifice, prevented any liquid from flowing out. In a few days, owing to the slight sensibility of the peritoneum of the canine race, the animal was well, and the wound around the canula healed, so that the gastric juice could be extracted with perfect ease, when its secretion had been excited by the presence of some alimentary substance; the stomach, as shown by Beaumont, not producing any during the time of abstinence. The operation required but a few minutes, and to show how little uneasiness the presence of such an opening caused the poor animals, a dog was shown on whom a similar operation had been performed two years previous, and who had from that time furnished gastric juice whenever wanted. He appeared to be in perfect health.

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* See Précis Elément. de Physiol., Paris, 1846.

Bernard has verified, as had previously M. Blondlot,* many of Beaumont's conclusions in regard to the action of the stomach and of its secretions. Their observations are important, as showing the identity of the digestive juices of the dog with that of the human subject. We forbear mentioning many of these results, which are doubtless familiar to our readers.

The gastric juice can be seen exuding from the mucous surface under the coat of mucus always found there, like the perspiration from the skin; but as to what it is exactly that secretes it, there appears to be considerable question. Bernard is inclined to believe that it is furnished by the corpuscles discovered by Gruby, which are very numerous, and exist only in the stomach; they are surrounded by a vascular network, and are found between the villosities. There are also two kinds of small glands perceptible in this mucous membrane—one a slight tube resembling the finger of a glove; the other with a bulb, which terminates in a narrow orifice at the gastric surface. Some have thought that the former of these furnish the mucus, and the latter the gastric juice. That the gastric juice comes more particularly, if not exclusively, from the portion of the mucous membrane around the pyloric orifice and from that near the liver, is proved by Bernard in a very pretty and simple experiment. On introducing into the jugular vein of one side some cyanide of potash, and into the other the proto-sulphate of iron, both in solution, they pass through the circulation side by side without combining, thus revealing the valuable fact that, though substances have a great affinity for each other, yet that no union of them can take place while they remain in the blood-vessels, probably because the heat evolved from a single or double chemical decomposition taking place in the circulation would be too great for the economy, as we see nature making use everywhere in the alterations and destructions in the animal system of mild ferments, and not of strong chemical agents. This fact of itself is one of great importance in demonstrating how unfounded are many of the ingenious theories of the chemical action of remedies after they have been absorbed. These substances, however, when brought into contact in the free secretions, unite at once where there is air. M. Bernard noticed, on examining the stomach of a dog whose jugulars he had injected as above, that the mucous membrane of the stomach was of the normal colour, except near the pylorus and over the hepatic portion, where it was of the deep blue of the prussiate of iron, the result of the union of the two substances in the gastric juice, as it was poured out. The cyanide of potash can be detected in the secretion of the stomach in twenty-five or thirty minutes after its ingestion, earlier than in any of the other secretions. During the period of abstinence the constant presence of mucus renders the reaction of the stomach alkaline, and it is only when the presence of some substance in the cavity excites the flow of the gastric juice itself, that it becomes acid. M. Bernard finds, as did Beaumont, that any febrile movement has the effect of arresting this secretion, and thus interfering very materially with digestion—a practical fact which ought not to be overlooked.

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* Traité Analytique de la Digestion.

The gastric juice as taken from the fistulous opening was invariably acid in its reaction, was clear as water, without taste, as without any odour except that of the particular animal. MM. Leuret and Lassaigne* have confirmed M. Bernard's observation, that the internal membrane of the stomach, when free from mucus, presents always an acid reaction.

In regard to the composition of this gastric fluid, it seems agreed, that at least ninety-eight parts in a hundred are pure water, the remaining two being made up of a free acid, the chlorides of lime and ammonia, phosphate of lime, an aromatic principle, and a particular animal matter, generally known as *pepsin*, and called by some *chymosine*, and by others again *gasterase.* M. Blondlot in his book already quoted, denies that there is a free acid in the gastric juice, the acidity of which he believes to be owing to the presence of the acid salt, the bi-phosphate of lime. His principal reason for this opinion was that he found, on the addition of carbonate of lime, that there was no effervescence produced. This, however, MM. Bernard and Barreswil† have proved to be caused by the extreme dilution of the acid, for, on concentrating the juice by evaporation, and then adding the lime, the carbonic acid was evolved. We have, moreover, the authority of M. Dumas in his Chimie Physiologique, that there is no biphosphate of lime in the stomach. The question has been much discussed as to what this free acid is, and what is its action in the process of digestion. Dr. Prout tells us that, on testing some gastric juice which he had distilled, with nitrate of silver, he found hydrochloric acid, and MM. Tiedeman and Gmelin say the same. Dr. Dunglison found this acid in the gastric juice of Dr. Beaumont's subject. Dr. Prout thinks that it is formed from the chloride of sodium of the blood being decomposed by a galvanic action, the liver and the gastric mucous membrane representing the two poles—the acid remaining in the secretion, the soda passes off by the liver. Berzelius said he could conceive of no other way than this by which it could be found in the stomach. However formed, there can be no doubting the opinion, now the generally received one, of the distinguished persons named as having detected this acid in the juice when distilled—but this does not establish its presence as a free acid in the stomach itself, for it may be the result of a decomposition of some salt. MM. Bernard and Barreswil state that, on adding a small proportion of hydrochloric acid to the gastric juice, it does not pass in distillation until near the end of the process. They think that, in the rare cases where this acid has been found in the distilled secretion, it was owing, during the last moments of the operation, to a decomposition of the chlorides from the altered chemical affinity caused by the concentration, or from the action of some other principle there found, probably the lactic acid. Their ground for so thinking is that, on distilling water containing table salt, after having rendered the solution acid by the addition of lactic acid, the last drops show on using the nitrate of silver the precipitate of the chloride of silver, owing to the formation of muriatic acid. Another proof they urge that this acid cannot be present is that if a small proportion of oxalic acid be added, there is produced at once a white precipitate of the oxalate of lime, which formation the presence of a very minute quantity of hydrochloric acid would prevent. Some have thought that the acid principle might be *acetic acid*, but neither Blondlot nor MM. Bernard and Barreswil have been able to obtain it by distillation; which, owing to its being very volatile, is sufficient proof that it is not present. M. Chevreul, some years since, in analyzing some gastric juice for Magendie, concluded that the free acid was the *lactic acid;* this opinion is sustained by Bernard and Barreswil, in their recent memoir presented to the Academy of Sciences. They recognize it by all the characters insisted upon by distinguished chemists. It forms salts of lime, barium, copper, and zinc, soluble in water; it gives a salt of lime soluble in alcohol, and precipitable by ether from the alcoholic solution; and can produce a double salt of copper and lime, the colour of which is more intense than that of a simple salt.* It is, moreover, reasonable to suppose that nature would employ in the stomach, as she does elsewhere, mild agents, particularly as M. Bernard has proved that any acid principle would act just as efficiently as that found in the gastric juice; this he showed in artificial digestion with this secretion. On rendering it alkaline the process was completely arrested, but it commenced again on adding any acid, no matter what, provided the quantity was sufficient to change the reaction. Moreover, in injecting into the circulation food digested artificially with gastric juice, thus rendered acid again, if the acid employed was a strong mineral one, such as the hydrochloric, it was difficult to add so small a proportion that the injection would not prove fatal. Bernard found, in trying his experiments in injecting different substances into the veins, that the lactate of iron, which is the most absorbable of all ferruginous preparations, was the only one which was not poisonous. From these facts M. Bernard concludes that *lactic acid* is the free acid found in the gastric juice, and that there is neither acetic nor hydrochloric present.

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* Recherches Physiol. et Chimique.

† Analyze du Sucre Gastrique, 1844.

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* See "Analyse du Sucre Gastrique." (Comptes Rendus de l'Acad. des Sciences, 1844.)

In regard to the action of the gastric juice, and to the whole process of digestion, we cannot but be struck with how valueless all the theories ever invented are in comparison with such facts as were afforded by the investigations of so accurate an observer as Dr. Beaumont, upon the opening into the stomach of St. Martin. The science now possesses two other cases of the kind in human subjects, a woman noticed by Circaud, and another spoken of by Helm,* and now of numerous ones produced artificially in animals. From these many points in digestion, before obscure, have been determined.

Dr. Beaumont was inclined to believe that the gastric juice was the only solvent, and that it acted upon and digested all kinds of food. This was a natural conclusion from seeing them all in solution, and as ready to pass out of the stomach, in, as he supposed, one homogeneous mass, called *chyme.* His observations unfortunately were confined to the operations in the stomach alone, and he mistook the dissolution of all alimentary substances, from the imbibition of the acidulated water, to be their digestion. M. Blondlot states, as the result of his experiments, that the action of the fluids of the stomach was limited to that class so rich in nutriment, the prominent constituent of which is nitrogen. He found that in artificial digestion such was certainly the case, and he concluded that the process was the same within the body. M. Bernard found, as we before mentioned, that amylaceous substances passed through the stomach, only having been but slightly altered by the saliva; in the same way, on opening the duodenum of a dog, he repeatedly found fatty matters coming from the pylorus perfectly unchanged. He then repeated Blondlot's experiments in regard to the action in the stomach upon meat, the principal constituents of which are fibrin, albumen, and creatin, all nitrogenized substances—he found that the gastric fluid had, when kept sufficiently long in contact with it, rendered it fit for absorption, for when he injected the fluid containing it into the circulation, that it was not discoverable in the urinary secretion, thus showing that it was assimilable; this was the case also with casein. He was astonished, however, to find, on examining the fluid mass passing through the pylorus, that he could still discover, though minutely divided, the muscular fibres in parts, showing that the whole amount had not been completely digested. So that, as the saliva had the properties of converting starch into dextrine, &c., when it remained long enough with it, yet that ordinarily in the process of digestion, the time of contact was too short for the complete action to take place. So it was in regard to the digestive powers of the gastric fluid on azotized food. M. B. agrees with Blondlot, that liquid albumen is not coagulated at first, before being digested in the stomach, but that it is merely rendered opalescent.

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* Cours de Physiologie, par P. Bérard, 1850.

Casein, however, is coagulated before being altered by digestion; the mucous membrane itself, as is seen in that of the stomach of the calf, known as rennet, has the effect of coagulating milk. All other classes of aliment are merely saturated and softened by the saliva and the watery portion of the gastric juice, and thus more easily divided by the peristaltic motion preparatory to their digestion further down in the intestinal tube.

The action of the gastric juice is found by Bernard not to be the same in all animals, but to be modified by the kind of food used habitually; thus, in herbivorous animals, as proved from that collected from an ox, it acts much less perfectly than does that taken from a dog.

It is thus seen that not only did Beaumont exaggerate the action of the gastric juice, in supposing it the universal solvent, but Blondlot erred even in thinking that in the living subject all the nitrogenized articles were digested in the stomach. So that the term *chyme* has in fact no definite meaning—the bolus passing out of the stomach being composed partly of digested and partly of undigested food—there being only a portion of the amylaceous and of the azotized, which are ready for assimilation, and in ordinary digestion the whole mass is submitted to further action from the intestinal fluids. Instead of digestion being completed in the stomach, it is merely commenced.

The question has often presented itself as to what was the principle in the gastric fluid which acted upon food? Those who believed that there was present more or less of free hydrochloric acid, taught that it was it, or at least that because acids destroyed meat, therefore, it by so doing digested them. Of this hypothesis Blondlot disposed by trying in separate vials the comparative action of mere acidulated water and the gastric juice; in both there was a change, but in the former there was merely a disaggregation of the muscular fibres. Bernard's experiment was still more conclusive. After submitting pieces of meat to the action of the two liquids, as did Blondlot, he injected them into the circulation, and found that that which had been subjected to the action of the simple water and acid, had passed off entire in the urine, whereas the other, having been assimilated, could not be detected in the renal secretion. The action, moreover, stated M. B., of the two fluids upon bony matter was very different, the acid water attacked and destroyed the mineral portion, whereas the gastric juice digested the gelatin and left the phosphates and carbonates unaltered. This may be easily seen by examining the stools of dogs fed upon bones. The active principle of the gastric fluid is now generally admitted to be the organic principle *pepsin*, which can be precipitated by absolute alcohol. It differs from all other organic substances by its coagulating casein without the aid of an acid. It does not, however, digest any species of food when not mixed in an acid solution, as may be easily seen in artificial digestion by rendering the liquid alkaline, but the process may be again commenced by adding any other acid; whereas, if you raise the temperature above 98° Fahr., you destroy for ever the digestive properties of the pepsin, and the fluid ceases to act. The action of the acidulated water is necessary before the pepsin can effect anything; the latter acting in force in proportion as the food is softened and divided by the other.

The influence of the nervous system over the secretion of the gastric juice, and consequently upon digestion, has been much discussed, and contradictory experiments have been published, even by such men as Sir Benjamin Brodie, Dr. John Reid, Longet, and Magendie. Some asserting that the integrity of the pneumogastric was necessary, and some the contrary; others again that it was through the grand sympathetic that any nervous influence was conveyed. To show what M. Bernard has done to elucidate this point, we propose giving two or three of his experiments. The two substances, *emulsine*, the albuminous matter found in almonds, and so named by Liebig, and the *amygdaline*, the principle of bitter almonds, when administered separately, are perfectly innocuous, but when united, there is at once a formation of hydrocyanic acid, and of course if they come in contact in the stomach of an animal, they must prove poisonous. Aware of this, he selected two dogs, on one of whom only he performed the resection of the pneumogastric nerve; to both he administered at the same time a certain quantity of emulsine, and half an hour afterwards he gave to each of them the same amount of amygdaline. The dog whose nerves were intact escaped without injury, whereas the other died in a few minutes. From this it was concluded that the first animal had digested the emulsine before the amygdaline reached it, but, in the second dog, in consequence of the cutting off of the nervous communication the gastric juice was not secreted, and the first ingested substance was not acted upon, but remained in the organ, and the other coming in contact with it, there was a formation of prussic acid; which, being absorbed, proved fatal. Another experiment proved indirectly the same fact. He gave to a rabbit which had been fasting thirty-six hours, and whose urine had become clear and acid, a meal of carrots, and in two hours and a half the urinary secretion became opake and alkaline, and so remained for eighteen or twenty hours. He found by cutting the pneumogastric during that time, that the urine changed again to be acid in its reaction, and clear. On another animal he perceived that a resection of the nerve, immediately after the meal of carrots, prevented entirely the urine from becoming filled with carbonates, which cause the alkalinity and opacity, and which are derived from the digested vegetable. So the urine remained clear exactly as if there had been no carrots in the stomach. This effect is attributed to the non-secretion of the gastric fluid by which the substances could be digested; or, as in this case, prepared for digestion. There being no liquid in the stomach, of course they were not softened or divided, but remained there unaltered. We are at a loss to conceive of any other than M. B.'s explanation of these results, namely, that the gastric juice is under the influence of the eighth pair. But he has given us still more conclusive evidence of this in his researches on the stomach by means of fistulous openings. He cut the pneumogastric of an animal into whose stomach he had previously introduced a canula at the moment when there was a free flow of gastric juice excited by the presence of an alimentary bolus; at once he saw the mucous membrane, which had been tense and turgid the moment before, become withered and pale (the vascularity greatly diminished), and the gastric juice ceased to flow. On introducing his finger into the stomach itself, the walls were perceived to be perfectly flaccid, and there was no longer the gentle pressure which he had previously felt. Another proof that after the resection there was no further secretion, was that on putting sufficient salt into the stomach to destroy the power of the gastric juice secreted before the operation, the bolus became putrid in consequence of the arrest of digestion.

We have now traced the alimentary bolus to the pyloric orifice of the stomach about to pass into the duodenum. At this point, as we before stated, it has received the name of *chyme*, which, far from being a homogeneous mass, consists of the fatty matters unaltered, of the amylaceous but partially converted into sugar by the saliva, and finally of the azotized material digested ordinarily but in part by the gastric juice.* The whole has invariably an acid reaction.

It is difficult to ascertain from the text-books on physiology what are the prevailing views as to what takes place in the process of digestion below the stomach. The impression seems to be that the intestinal fluids separate the nutritious portion of the chyme, which is absorbed by the lacteals and known as *chyle*, from the excrementitious which passes through the intestine. Carpenter speaks of chyle as imperfectly elaborated blood. It is particularly to this heretofore obscure stage of digestion that we think M. Bernard has made some brilliant contributions, as we shall proceed to show.

The Bile.—The most important point in regard to this fluid is to decide in the first place the much discussed question whether or not it is purely excrementitious. That it is so, was supposed from the character of its proximate elements, the amount of hydro-carbon; to remove which, as an auxiliary to the lungs, whether from the aliment as such, or as effete matter taken from the blood in the course of the circulation, was thought to be its use. Moreover, it flows not as the ordinary secretions at the time of digestion, when needed, but, like the urine, more or less constantly. An objection, however, seems to present itself to its being exclusively excrementitious, from the point in the intestinal canal where it is emptied. Why, if merely to throw off what is injurious to the system, should it be poured out at the very commencement of the small intestines, where absorption is most active? Such is not the mode in which nature provides for the other excrements. It would, from this fact merely, be natural to suppose that it did act as a chylo-poietic fluid. But we are not without experiments. M. Blondlot, whose authority we have so frequently quoted, declares,* after several times tying the ductus choledochus of dogs, that the biliary secretion is not necessary for digestion; because, though nearly all the animals died, yet that in two or three instances they survived months, and in one case years. The deaths he thought were caused by the retention of the bile within the blood, as was shown by the jaundiced tint of all the tissues and secretions of the body; indeed, in more than one case the bursting of the biliary duct into the peritoneum caused death. The inferences of Blondlot might appear conclusive had we not the experiments of the Belgian professor, M. Schwann, which have been since repeated and verified by M. Bernard. They too succeeded in tying the ductus choledochus without killing the animals, but on making autopsies of them some months after, they found that a new duct to convey the bile to the intestine had been formed! In other cases they inserted canulæ into the duct so as to convey the bile outward, and thus prevent a new one from being made, and the invariable result was fatal. This was conclusive, as it showed that death was produced not only by the poison of the bile, but by the mere absence of its flow into the digestive tube. Moreover, if the biliary fluid is only effete matter, why is it that it is not detected as such in the excrement of the bowels? Liebig tells us that no choleic acid is ever found in the stools, but that it must be re-absorbed; in fact, the colouring matter is all that is there discoverable of the bile. It being decided that this secretion is necessary for the process of digestion, and not merely excrementitious, the important question arises as to how and upon what substances it acts. To solve this, Sir Benjamin Brodie tied the ductus choledochus of cats, and on opening the abdomen he found that the lacteals were not filled, as usual, with a whitish mixture of the consistence of cream, but with a transparent fluid, which he regarded as composed of lymph and of the most liquid portion of the chyme. Supposing that the white chyle was fatty matter, he drew the conclusion which he published, that the bile digested fat. Magendie, on hearing of these interesting experiments, hastened to repeat them on dogs, his favourite victims. A great number were sacrificed before he could succeed in getting two of them to live even a few days; and in them, contrary to what Brodie had stated, he found that a white chyle had been absorbed by the lacteals, and that as before fæcal matters had been formed, notwithstanding the interruption of the flow of bile.

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* Dr. Beaumont's tables, so frequently quoted and so much relied upon, of the mean time of digestion of the different articles of diet, are thus rendered of but little value—he having founded them upon the supposition that, when any substance disappears from the stomach, it has undergone complete digestion.

It is painful to think of the loss of life to the dog and cat race this difference of opinion, between such distinguished men, has given rise. M. Blondlot alone killed no less than twenty-five dogs in these experiments. Several others entered the field, among them Dr. Mayo, and MM. Tiedemann and Gmelin. It is curious, and at the same time discouraging, to see the different conclusions at which they arrived—the partisans of each equally positive in their opinion. As we shall presently show, M. Bernard has cleared up the difficulty by explaining what is properly speaking the cause of the white fluid in the lacteals, from what it is formed and how.

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* Essai sur les Fonctions du Foie, Paris, 1846.

Beaumont added bile, taken from a cow recently killed, to some chyme coming from St. Martin's stomach, and found that the effect was to separate it into three distinct parts, a reddish-brown sediment at the bottom, a whey-coloured fluid in the centre, and a creamy pellicle swimming on the top. The centre he concluded was chyle, the creamy pellicle digested fatty matter, and the sediment the excrementitious portion. Others had the same results. Müller* made an emulsion by adding bile to oleaginous substances. Tiedemann said that the white flakes seen in the liquid was mucus. This we believe was the uncertain state of our knowledge in regard to the action of the bile, when Bernard commenced his experiments. He had observed that in most animals, as in man, the duct from the pancreas opened either side by side in the duodenum, or else together with the biliary duct; in the dog that there were two canals from the pancreas, one emptying with the ductus choledochus and the other lower down in the intestine; in the rabbit, however, by a singular provision of nature, the pancreatic duct entered the duodenum eleven or twelve inches further down than that from the pancreas, the intestinal canal being unusually long for so small an animal.

Having procured the biliary secretion from the rabbit, perfectly pure and fresh, and certain that it contained no other secretion, he tried its effect upon the several varieties of food. He found that when thus used alone, it had no possible action except upon rancid oil, with which it formed a kind of soap, but upon pure oil there was nothing more than a mere mechanical mixture, the two substances separating when left standing, the oil floating on the surface. Believing that it could not be without its use, he determined to try it in combination with the other intestinal fluids. It was a thought worthy of him, and productive of important results.

Mixed with gastric juice, either artificially or in the upper part of the duodenum, as could be observed in the rabbit, it is shown to have several properties. It renders the mass alkaline; it precipitates and renders insoluble the azotised portion, leaving untouched the saccharine and the fatty. This precipitate Magendie designates "le chyle brut." It further renders the chyme indestructible and imputrefactive, by regulating the chemical reactions and the evolution of the gases arising from decomposition. This M. Bernard substantiated by showing two pieces of meat in vials, where they had been put three months previous, the one with gastric juice alone, and the other with gastric juice and bile mixed—from the former, there was a strong ammoniacal odour resulting from decomposition, whereas the latter was pure and free from any smell whatever.

By precipitation, bile, moreover, has the effect of arresting every kind of fermentation of all organic substances. To prove this to his auditors, Bernard introduced into the stomach of a dog a cake of yeast, and in two hours, when it was perfectly saturated with gastric juice, he withdrew it, and applying heat to a portion of it, there was an evolution of carbonic acid, showing the commencement of the fermenting process; to the remainder, before employing heat, he added some bile, and though kept over a hot water bath much longer than the other, there was no evidence of its fermenting. Another experiment was performed to demonstrate this property of preventing fermentation, by the administration of the emulsine and amygdaline. The emulsine, which is the ferment, was injected into the rectum, and the amygdaline into the stomach—in due time the latter descended, or part of it, and came in contact with the former in the rectum, and in a few minutes, from the formation of prussic acid, the animal died. In another subject the emulsine was placed in the stomach, and the amygdaline in the rectum, the reverse of what was done in the first instance. Here there was no fatal result, in consequence of the bile having destroyed the ferment before it reached the other substance in the rectum. Still another proof may be drawn from M. Schwann's experiments in introducing canulæ into the ductus choledochus. The animals licked the bile as it flowed externally, and it caused their death the sooner, by precipitating the pepsin in the stomach, and thus preventing all digestive action of the juice. In this way the bile prevents the formation of the gases in the intestinal canal from decomposition of the several articles of food. The medical application of this will at once strike your readers—when from any cause there is a deficient supply of bile to the intestine, or when more food is swallowed than the quantity of bile can act upon (for of course there is a limit to the amount of this secretion, as Beaumont found there was to the gastric juice), or if from any other pathological cause the character of the fluid is altered, or its action prevented, there is a putrid fermentation, from which there is an evolution of flatus and a consequent diarrhœa. Under these circumstances there is a predominance of alkalies, and we would suppose, that acids could be advantageously employed. By what principle the bile acts seems undetermined. Prof. Platner, of Heidelberg, supposes that the salt, the choleate of soda formed in the bile from the union of the peculiar fatty acid, choleic with the soda, acts upon the lactate of albumen, fibrin, or casein, as the case may be, and that there is a double decomposition resulting in the formation of the lactate of soda and the choleate of albumen, &c.

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* Manuel de Physiologie.

Before proceeding to the action of the bile in combination with the pancreatic juice, which constitute what is, properly speaking, the *intestinal fluid*, let us arrive at what to us is one of the most brilliant discoveries of this distinguished physiologist—*the use of the pancreas*, which is, that its secretion enjoys, to a very high degree, the prerogative some had attributed to the bile, that of emulsioning oleaginous bodies, and thus rendering them capable of absorption by the lacteals, and that in fact, it is the only fluid concerned in the digestion of fatty matter! In making some experiments, with a view of comparing the digestion of herbivorous animals with carnivorous, he, by keeping all other food out of its reach, forced a rabbit to eat nothing but meat, after which he opened the abdomen, and observed that the absorbent vessels of the small intestines contained a limpid fluid for the distance of about twelve inches below the pylorus, and that from that point they were white, and contained the same fluid which is found in the lacteals of the human subject, and in the dog throughout the whole extent of the duodenum. Remembering that, in man, the ducts of the liver and of the pancreas enter together near the pylorus, and that in the dog one of the pancreatic canals empties high up, with the duct coming from the liver, it at once occurred to his quick mind that it must be the secretion of the pancreas which made the milky fluid, by acting upon the fatty matters, and, of course, it was only below the insertion of the duct which conveyed it to the intestine that the absorbents contained the emulsion which gave them their peculiar white appearance.

He proceeded forthwith with direct experiments, and extracting pure pancreatic juice, he mixed it at a mild temperature with oil, and afterwards with butter, mutton tallow, and indeed, with all varieties of fat, and with them all he made an emulsion resembling in colour and in consistence, and apparently in every particular, the chyle he had extracted from the mesenteric lacteals. To test whether or not there was any other liquid or secretion of the body which had the same effect, he tried the bile, the saliva, the gastric juice, the serum of the blood, and even the cephalo-rachidian fluid; with all, the result was a mere mechanical mixture, which, on standing a few minutes, was destroyed just as though it had been attempted to mix oil and water; whereas, the emulsion formed by the fat and the pancreatic juice remained perfectly unchanged. These experiments, made out of the body, were not conclusive enough to a mind so accustomed to close and vigorous observation, but needed confirmation, which he was not slow in procuring for himself and for science. After keeping a rabbit fasting for some time, he gave it a full dose of twenty grammes of fat, and allowing sufficient time for it to be pushed down the intestine, he killed the animal in three hours, and found the absorbents nearly empty to the point of insertion of the pancreatic duct, containing only a small quantity of a limpid fluid; whereas, below that they were distended with white chyle. In the intestinal canal above the duct of the pancreas, there was some melted fat which was unaltered in colour, but below it was seen more or less of the same white emulsion corresponding to that contained in the lacteals. Here it was evident the biliary secretion had had no effect, for it was poured into the canal near the stomach, and the substance was unaltered for inches below. His next essay was in tying the pancreatic duct of another animal of the same species before giving the oil, and on opening the abdomen, after the same lapse of time, he found the lacteals free from chyle, and the oily matter undigested in the intestinal tube, passing down to be thrown off in the excrement. On putting a ligature around both the pancreatic ducts of a dog, he had the same result. He could now assuredly be satisfied of the truth of his discovery, that the digestion of fatty matters was the peculiar office of the pancreas. On repeating his experiments in the presence of M. Dumas, he remarked, that he knew of no alkali, not even the caustic potash, which could make with oil so perfect an emulsion, or in so short a time.

There can now be no difficulty in explaining the contradictory results of Brodie's and Magendie's experiments in regard to the action of the bile on fatty matter. The former had operated upon cats where, owing to the proximity of the ducts of the liver and the pancreas, it is difficult to tie the one without the other; and he, by putting a ligature around both, of course prevented the flow of the pancreatic juice as well as that of the bile, and thus interfered with the digestion of fat, and consequently of the appearance of the thick white fluid in the absorbents. Magendie selected the dog, and in tying the ductus choledochus he probably included also one of the pancreatic ducts; but he left free the other, which opens further down in the intestine, and which acted upon the particles of fat, and they were afterwards taken up by the lacteals. Müller's error can be accounted for in the same manner; in the bile he experimented with, there must have been a mixture of the pancreatic fluid. If further proof be desired, it may be found in the fact mentioned by M. Bernard, that the herbivorous animals, when confined to their ordinary food, have no white absorbents or lacteals. He has, moreover, found that in all mammiferous animals the pancreatic duct always empties with or below the biliary duct, never above.—For the purpose of showing those present how he obtained the pure secretion of the pancreas, and its action, he had a dog placed on the table before him, and, after securing him well by tying his feet and muzzling him, he cut into his right flank, and drawing out the pancreas, which was of a bright rose, the colour it always presents when secreting, he inserted a small silver tube into the duct, and secured it there by a ligature. At the end of the canula was an India-rubber bladder, to receive the secretion which flowed only a drop at a time. At the close of the hour, during which time the animal continued eating without being in the least disturbed, the sac was found to contain about two fluidrachms (fʒij). The Professor remarked that, if the canula was withdrawn and the wound closed, it would be healed up in two or three days without any unpleasant consequences. The fluid, as thus drawn, was colourless and viscid, and in some respects resembled the saliva extracted from the submaxillary gland, but differed from it essentially, being coagulable by alcohol and by heat. Its alkalinity was evident, only a drop sufficing to restore the blue to reddened litmus paper. Its alkaline reaction had been denied by Tiedemann, which, said M. Bernard, must have been owing to his collecting it as it flowed into the intestine, where the acid mucus changed it, for, when collected pure from the duct itself, he had invariably found it alkaline. On adding some of the pancreatic fluid collected in the little bladder to olive oil, and stirring the mixture for a few minutes, there was formed a creamy fluid corresponding very closely to some chyle, which he had, a few minutes previous, collected from the lacteals and the thoracic duct of a rabbit fed upon the same oil. M.

Bernard exhibited the duodenum of a rabbit, and the absorbents in the mesentery. Those from opposite the insertion of the ductus choledochus down to the point where the pancreas empties its secretion, contained a transparent fluid in small quantity; whereas, below that, the white ramifications, showing the presence of the fatty emulsion, were very evident. This last experiment, which is perfectly conclusive, can be easily verified by any one. Keep a rabbit fasting for thirty-six hours, and then administer a dose of fat and kill it in a few hours. To push the oil down in the intestine, and to facilitate matters, a meal of some vegetable may be given.

Although oily and fatty matter are neutral in their reaction, the emulsion is at first alkaline; but in artificial digestion it soon becomes acid, owing, M. Bernard thinks, to the transformation of the fat into glycerin and the fatty acids, margaric, stearic, or oleic, as the case may be. This is evidenced by the odour of butyric acid when butter is the fatty substance used, and the mixture is permitted to stand some little time. We see it stated by Dr. Chambers* that Prof. Frericks, of Berlin, though he admits the truth of the digestion of fat by the secretion of the pancreas, yet denies that there is such a transformation, for that the oil globules do again unite. To this we reply that we have ourselves seen the emulsion after it had remained for days without being disturbed, and, on a close examination, not the slightest change could be detected from what it was immediately after the mixture. Dr. Chambers says that any animal substance undergoing a chemical change, which pancreatic juice does with great rapidity out of the body, in contact with butter, will cause an interstitial fermentation of the butter itself, and thus give rise to the acid smelt. This may be the explanation; but both Drs. Frericks and Chambers have misunderstood M. Bernard, in supposing that he thought that there was a transformation of the fat into glycerin and the fatty acids in the intestine, from the action of the juice of the pancreas; on the contrary, he has proved such is not the case, by finding the emulsion collected in the lacteals to be still alkaline, and in it the presence of fat globules under the microscope, though very minutely divided. Moreover, we have the testimony of MM. Bouchardat and Sandras,† that they have found and recognized in the chyle, the oil of sweet almonds, mutton and pork fat. Certain it is that the globules found in ordinary fat cannot be assimilated without being altered, for, if injected into the circulation, they prove fatal by their arrest in the capillaries of the lungs, through which they are too large to pass, just as bubbles of air entering the veins cause death by the stoppage of the pulmonary capillaries. M. Bernard does think it probable that, in the ultimate changes which fat undergoes in the body, there is a transformation into glycerin and fatty acids. His ground for so thinking is the result of an experiment of M. Magendie, who, having fed dogs exclusively for some time upon butter, found their skins saturated with an oily matter, far from resembling true fat, and giving off the odour of butyric acid. M. Bernard further professes not ever having been able to detect in the blood any of the acids resulting from the oxidation of fatty substances, fat being always neutral as found in the economy; that such conversion must take place only previous to their being given off in the form of carbonic acid and water, in contributing to the formation of animal heat.

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* On Corpulence, or Excess of Fat in the Human Body, by T. K. Chambers. London, 1850.

† Recherches sur la Digestion, et l'Assimilation des Corps Gras, 1845.

We believe that the discovery of the use of the pancreas by Bernard has not been denied. He himself had, a year since, repeated his experiments nearly forty times upon different animals; and we see that recently M. Colin, the distinguished head of the Anatomical Department of the Veterinary School of Alfort, has presented to the French Academy the results of a series of experiments on the pancreatic juice in the principal domestic ruminants, which correspond precisely to those of M. Bernard. M. Colin states that he selected the animals differing as much as possible, in food and in mode of digestion, from the carnivorous.

Although the fact itself is not disputed, yet the explanation appears to be. M. Mialhe, so wedded to his view that alkalies are the great solvents in the animal system, was inclined to impute* to their presence in the secretion the cause of the formation of the emulsion. M. Bernard, however, shows the falseness of this hypothesis by demonstrating that the fluid acts even in an acid mixture; moreover, this cannot be true in the intestine, where the acidity of the mucus would be sufficient to change the reaction of the juice as it drops from the pancreatic duct. Bernard has succeeded in isolating an albuminous substance in the secretion of the pancreas, to which he attributes its action—it has been called *chylopoine.* It resembles albumen, with the important difference that, after being coagulated by alcohol, it is redissolvable in water, and the solution possesses the same properties as the fluid itself. On the application of heat, the pancreatic juice coagulates *en masse,* and is converted into a concrete matter of very great whiteness, like the white of an egg, there being no liquid left. M. Bernard finds that sulphuric, nitric, concentrated hydrochloric acids, the metallic salts, and alcohol, all precipitate the albumen of the secretion of the pancreas; but the milder acids, the lactic or the acetic, do not. Alkalies redissolve it when precipitated by the acids, or by heat.

The pancreas itself, when saturated with water, imparts its properties to the solution. Another peculiarity of the pancreatic juice, as shown by Bernard, is that, of all liquids of the body, it changes the soonest when exposed to the air, and loses its coagulating properties. This quality is also changed in that drawn from those animals where the operation for abstracting it had produced much disturbance of the nervous system. For that reason, owing to the slight sensibility of his peritoneum, the dog is the best animal to be experimented upon. It is important that the juice used should be what is taken immediately after the opening is made, or else after the inflammation of the wound has subsided.

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* See Mémoire sur la Digestion et l'Assimilation des Matières Albuminoïdes, &c., 1817.

We ought not to omit to state that science already possesses several pathological cases where, from disease of the pancreas (as was proved from the autopsies), fatty substances were not digested.

Nor is fat the only substance acted upon by the secretion of the pancreas. MM. Bouchardat and Sandras* had previously shown its active power of converting cane sugar and amylaceous substances into glucose; it is not necessary for this property that there should be any other ferment than that which acts upon the fat, for, as Bernard has shown, very many animal substances have the same effect.

The *intestinal fluid,* which is composed of a mixture of bile and the pancreatic juice, together with the secretion of Brunner's glands, is shown by M. Bernard to have some very important usages in the process of digestion. It, owing to the presence of the fluid from the pancreas, acts upon fat and upon the saccharine class of aliments. It, moreover, has the property of rendering soluble the azotized matters precipitated by the mixture of the gastric juice and the bile; as thus finally acted upon, they form a substance known as *albuminose,* which differs from ordinary albumen in not being coagulable by heat, but by the mineral salts. Magendie's experiment will be remembered, of introducing into the duodenum through a fistulous opening a piece of sausage, which, on withdrawing the string to which it was attached, he found had been completely digested. Following this up with similar experimental researches, M. Bernard states that any class of aliment thrown immediately into the duodenum will be digested by the intestinal fluid. So, he teaches that the mixture of the chylopoietic fluids found in the intestines is a *universal solvent,* capable of rendering any alimentary substance of any description assimilable! Out of the body, he finds in artificial digestion the same effect. Dr. Dunglison explains Magendie's result, by saying that it was owing to the action of the gastric juice which had passed down into the intestine. Be this as it may, certain it is that the digestion of azotized matter in the stomach is very incomplete, whereas, in the intestinal tube lower down, the process is very active, much more so than that of the stomach.

We have now followed the different varieties of food to where they are ready for absorption. Before this they must be converted, it will be seen, into one of the three substances, *albuminose, emulsion of fat,* or *glucose;* for, previous to reaching this stage of digestion, they are not capable of being used as nourishment to form part of the living structure.

In regard to the various views put forth by authors of the process of assimilation, there is, unfortunately, more of plausibility than of certainty. M. Bernard, by instituting some experiments to ascertain the mode of absorption of the different digested substances, has arrived at some curious facts. He finds that neither the albuminose nor the saccharine compounds are found in the contents of the thoracic duct, but "*en masse*" as taken up by the mesenteric veins in the vena portæ; moreover, that these substances, when injected into the superficial veins, pass off by the urine in a very brief space of time; but, if injected into the portal vein, they cannot be recognized in the same secretion. From these premises, he concludes they undergo a physiological modification within the liver, and that it is necessary, for their perfect assimilation, that they should pass through that organ before coming to the lungs. The fatty emulsion, on the contrary, is absorbed only by the lacteals, and is perfectly assimilated when injected into the superficial venous circulation, showing that it does not require the action of the liver. Some have reported having found traces of fat in the vena portæ; but this is an error, as Bernard shows by tying it near the liver, immediately on opening the abdominal parietes, where we have, of course, its proper contents without any of that of the liver, caused by the reflux from the removal of the usual pressure—which contains, as we shall presently show, fatty substances.

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* Annuaire de Thérapeutique, 1846.

The Formation of Fibrin.—M. Bernard thinks that much of the albuminose is transformed at once, as it passes through the liver, into fibrin. His ground for this opinion is that the blood which enters the liver contains in large quantity the digested azotized matter, and but little fibrin, even when the animal has been fed upon meat; whereas, the blood of the hepatic veins contains much fibrin, and but little of the albuminose, and further, that this difference is only observed during digestion.

Let us, in a few words, give a *résumé* of what has been stated in regard to digestion: 1st. The principal use of the saliva is mechanical, the nature of the several secretions composing it being different, and answering different purposes. That of the parotid and sublingual, being clear and limpid, is poured out at the moment of, and assists, mastication; that of the submaxillary, being thick and glutinous, is secreted at the time of deglutition, for which it is more particularly adapted: out of the body, if permitted to remain long enough in contact with the amylaceous class of food, it converts them into dextrine, grape sugar, and lactic and butyric acids; but ordinarily, in digestion, it effects but little transformation, owing to the time of contact not being sufficient. It has no effect upon any other food, except that of softening the bulk, from the imbibition of its watery portion. The active animal principle found in the saliva is not a peculiar substance which deserves the name of diastase, as many other organic substances have the same digestive properties. 2dly. Amylaceous substances are generally digested by the intestinal fluid, by being converted into glucose. 3dly. Nitrogenized food is susceptible of being rendered assimilable by the action of the gastric juice alone, when it is sufficiently prolonged, but generally it is only partially digested by it, and has afterwards to be submitted to the influence of the bile and pancreatic juice; the bile renders the mass indestructible, and preventing fermentation, imputrescible, thus regulating the formation of gas in the intestinal tube. 4thly. The pepsin is the active principle of the gastric juice—lactic acid its only free acid—and the secretion is under the influence of the nervous system. 5thly. Fatty substances are digested only by the pancreatic juice, which converts them into an absorbable emulsion. 6thly. The intestinal fluid is of itself a perfect solvent for all classes of food. In this, we see the beautiful provision of nature, to secure the proper digestion of food by furnishing several liquids to effect the same purpose. Thus, although the saliva and the gastric juice are capable of acting efficiently, yet ordinarily the food passes too rapidly from the mouth to the small intestines for the necessary transformation to take place, and a compound liquid is found in the duodenum, ready to supply the deficient action of the others. The nitrogenized portion of the aliment, being the most important, as the most rich in nutriment, it is necessary should come in contact with all these fluids. Fatty matters are permitted to pass untouched, until the others have been acted upon; and it is proved that what is commonly known as chyle is not, as is generally believed, the nutritive portion of the chyme, but is formed exclusively of digested fat.

Our space will not permit us to enlarge upon the importance of these discoveries, as showing that nature has provided a distinct place for the digestion of each kind of food, or of their value in the treatment of the various forms of indigestion passing under the name of dyspepsia; not only can the seat of disease be detected, but the case may be judiciously managed, often solely by the regulation of the diet.

The Secretion of Fat.—The general impression in regard to the use of the fatty portions of the aliments has been that they, in part, pass at once to the lungs, where they furnish material for combustion, and thus contribute to the formation of animal heat; and that the other portion is deposited in the form of adipose tissue in the different structures of the body, not only for the mechanical purpose of pads to facilitate the motion of the joints and of the muscles, but also as a protection against cold, and as a reserved supply of fuel to the lungs. It has been for years a difficult problem for physiologists to solve, from what source was derived the immense amount of fat sometimes found in the tissues. That the digestive powers could only touch a certain quantity of what was put into the stomach was made evident by Magendie's experiments; for fat, over a certain amount, was not acted upon in the intestines, and even all which was taken up by the lacteals could not be appropriated by the system. The ducks fed exclusively upon lard became perfectly saturated with it, and it exuded from the end of their feathers; and M. Boussingault found but little difference in the amount of oily matter in the blood of pigeons and ducks, kept without food for some time, and in that of others stuffed with fat. That fat is employed as one way of passing off the hydro-carbon from the system, as effete matter, is evident, from the means ordinarily employed to fatten animals. One mode is to prevent the lungs from excreting so much by keeping the animals within a coop, the absence of exercise lessening the demand of the respiratory apparatus for carbon; indeed, we are all familiar with the fact that bodily inactivity with a full diet produces obesity, from the simple fact that less of the tissues are consumed. Light, too, by the usual chemical changes, diminishes the quantity of fat; therefore, it is excluded by the Italians from the rooms where they fatten their birds. The exclusion of light has the further effect of removing from the view those objects which, by arousing the attention and the anxieties, interfere with the activity of digestion. We thus know of means of retaining within the system fat which is formed; but the question arises, how is it produced in such quantities, when not contained in the alimentary material? The fat contained in the herbs given to a cow cannot account for the amount of butter found in her milk; nor can the hay, on which cattle are fed to prepare them for market, supply all their fat. M. Persoz found, in fattening geese, that the oleaginous matter formed in their bodies was more than double the amount which could be extracted from the maize consumed. In the interesting volume on "Corpulence," recently published by Dr. Chambers, of London, it is maintained that the additional supply of fat, over and above what is taken ready made into the stomach, is obtained by the conversion of other substances into it. He adopts Liebig's theory, that fat can be formed from a modification of the principles of terniary composition, which enter in so large a proportion into the food of herbivorous animals; thus, sugar, gum, starch, &c., are transformed into fat by parting with a portion of their oxygen. Dr. Chambers supposes that these substances undergo fermentation in the intestine, by the action of some of the secretions, and are thus converted into fat before they are absorbed. But it appears that it is not only when fed upon such substances that animals fatten, for M. Boussingault found that geese fed upon nitrogenized matter, such as albumen and pure casein, had more fat upon them than could have been taken into their stomachs. This leads Dr. Chambers to suppose, as did Dr. Combe,* that not only those proximate principles which contain oxygen and hydrogen in the proportions to form water can be converted into fat, but that complex nitrogenized compounds are capable of the same transformation into a non-nitrogenized matter. Such hypotheses, perfectly destitute as they are of proof, cannot be relied upon; but the fact was, the phenomena had to be explained. Now, if fat could be thus formed from the first class by its yielding some of its oxygen, and from the second by its being freed from all its nitrogen, where does the metamorphosis take place? To M. Bernard's mind, even Liebig's theory was far from being satisfactory; he desired some evidence derived from observing the operations of the functions of the living subject; he did not denounce it as absurd, but as unestablished by facts. Dr. Chambers supposes the change takes place in the intestine. Bernard, by the examination of herbivorous animals, which had been fed upon substances which contained no oleaginous principle, found that they had no white lacteals; the absorbents from the intestinal tube contained only a clear transparent fluid, with no trace of fat. On extending his researches, he perceived that the absorbent vessels, commonly called lacteals, were different in the herbivorous from what they were in the carnivorous, and that the only way to have either the white milky appearance, or to find the fatty emulsion in the absorbents, was by administering oleaginous matter by the stomach. Thus was refuted Dr. Chambers' view before it was advanced. Where else could this important change take place, if not in the process of digestion?

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* See Physiology of Digestion, &c., by Andrew Combe, M. D., Edinburgh, 1849.

M. Bernard had already proved, as shown in our first communication, by his discovery of the fabrication of grape or diabetic sugar by the liver, that the principle, heretofore acknowledged in physiology, that the animal system must derive from alimentary substances each and every constituent, was false. Not being able to account in any satisfactory way for the accumulation of fat in the tissues, he determined to see if it too could possibly be fabricated by any organ. His attention had been drawn to the liver from two or three facts recognized in pathology; in the first place, there was a disease known as fatty degeneration of that organ, found in persons suffering with phthisis, and in those habituated to the excessive use of alcoholic liquors; in both of which it was plain the liver had extra duty to perform. And again, why was it that, on keeping geese from consuming their fatty tissues, the amount accumulated should be so much greater in the liver than in the other organs, thus preparing the delicacy of the "foie gras?" There was still another fact which induced him to investigate particularly the action of the liver. Previous experimenters had found fatty matter in the portal vein, as he himself had in making his researches on the absorption of the different alimentary materials; but subsequently, on tying the portal vein near the liver, immediately on cutting through the abdominal parietes, he found there no trace of fat, though the experiment was performed after the dog had taken a meal exclusively of oleaginous material, from which it was evident that the fat he had there found in his previous experiments could not have been derived from the absorption of what had been digested in the duodenum. Collecting, therefore, the blood which entered the liver, he found no fat except when there had been a reflux of the fluid of the organ itself; but, on testing that which flowed from it in the hepatic veins, he there found it in abundance. After satisfying himself by repeated experiments that this was the case, he concluded that what was there found must have come from the liver, and have been formed there, as was the sugar. Astonishing as this may appear, that any one organ in the body should have the power of producing two elements so necessary for nutrition, yet the presence of fat in the hepatic vein, and nowhere else in the venous system, except in the subclavian below the insertion of the thoracic duct, cannot be accounted for in any other way; and, as we shall presently see, there are other facts confirmatory. Whether or not it is in this organ that the transformation supposed by Liebig takes place, M. Bernard does not decide; but clear it is, he maintains, that there are two sources of fat in the system, even as there are of sugar—one from alimentary matters, and the other from the liver.

By a simple experiment, M. Bernard proves that the moment of digestion, when the liver is congested and in the active performance of its various duties, is the time selected by nature for this its newly-discovered office. After giving a dog a full meal of vegetable food, from which no fat could be extracted, he cut into the abdominal parietes, and, after putting a ligature around the portal vein, to prevent a regurgitation, he examined the blood of this vein, and found that there was no trace of fat, whereas that from the hepatic did contain some, and a decoction of a piece of the liver itself was cloudy, fat floating on the surface, which could be separated by ether. A piece of a liver of another dog, which had been expressly kept fasting for some time, was boiled, and the liquid was free from fat globules. In the liver of the rabbit and of other herbivorous animals, there is constantly more or less of fat, owing to the slowness of the process of digestion in them.

Hepatic fat differs somewhat from the other varieties; it is melted at a lower temperature; it is united to an organic matter from which it is with difficulty separated; it differs from the fat emulsioned by the pancreatic juice. It resembles most the fatty principle of butter. Sometimes it is found in great abundance, particularly in females during the period of lactation. It is then also discoverable in the blood, which may be seen by the whitish colour of the serum; or it can be extracted by ether. This fat corresponds to that formed in the liver; and M. Bernard asks the question whether this may not be the origin of the fat of milk which is secreted from the blood by the mammary gland. On pursuing his researches, Bernard finds that the blood of the arteries, coming from the lungs through the heart, contains nearly as much fatty matter as that of the pulmonary arteries, and that such is the case throughout the arterial circulation; while, on the contrary, in ordinary venous blood there can scarcely be discovered a trace of it. From this it is concluded that, as it disappears in the general capillary system, it is deposited as lard, suet, &c., in the cellular tissue. It doubtless serves, as does the hepatic sugar, the purposes of nutrition; but the latter is consumed in the lungs, whereas this is accumulated in deposits, as seen in hibernating animals. Further confirmation of the production of fat by the liver may be drawn from M. Bernard's experiments upon the influence of the nervous system over the quantity detected in the organ itself and in the blood leaving it. Any resection of the pneumogastric, or a violent shock to any part or to the whole of the nervous centres at once, influences its secretion. There appears to be a singular antagonism between this production and that of sugar, when the medulla oblongata is punctured; the fat diminishes in quantity as the sugar increases. In one experiment the arrest of the production of fat in the liver continued for three hours after the puncture, though the animal was in full digestion. But Bernard had, very *à propos*, an opportunity of examining the liver of a diabetic patient who had died suddenly, shortly after a full meal. He found no less than seven grammes of sugar in it; but neither by ether nor alcohol could he discover traces of fat—thus verifying in the human subject the antagonism he had found to exist between the two secretions in animals rendered diabetic. M. Persoz, in his experiments previously alluded to, in fattening geese, found a large quantity of fat, not only in arterial blood, but in all the venous trunks, and in many parts of the body where, in a state of health, it cannot be discovered; the quantity of fat in the "foie gras," which far exceeded that in any other organ, rendered it milky white: this pathological condition being caused by the production in such quantities that it could not be consumed by the formation of carbonic acid and water.

There are other pathological facts which confirm this physiological discovery. Several authors, particularly Dr. Johnson, have mentioned a disease characterized by the presence of fatty matter in the urine, which, from its whitish colour, has been named *chylous urine.* M. Rayer mentions* several instances of this symptom occurring in patients where blood drawn from the basilic presented the same chylous appearance; while, ordinarily, as we before stated, blood drawn from the veins, except between the liver and the heart and below the insertion of the thoracic duct, contains no fat. Bernard exhibited to his class a specimen of urine voided that morning, which presented a cloudy chylous aspect, and from which, on treating it with ether, fat was extracted, resembling butter, and not distinguishable from the fatty matter found in the liver. M. Bizio, a chemist of considerable distinction, has reported some cases of chylous urine, in which the fatty principle resembled also that found in milk. Whence, asks M. Bernard, is this matter, found in the urinary secretion, derived? Does it not come from the liver, which, owing to some derangement of its functions, secretes more than can be consumed, and thus the surplus passes off in the urinary secretion, the receptacle of all useless material? This disease Bernard thinks may be appropriately named *a fatty diabetes.*

M. Bernard drew attention to a memoir to the Institute, by M. Guillot, in which he states that in phthisis, pneumonia, and indeed in all diseases where there exists an interruption of the normal pulmonary circulation, there is found in the lungs a quantity of fat, not discoverable in other diseases. This he thought might be explained by the arrest, within the pulmonary tissue, of the fat coming from the liver and through the subclavian.

Let us, in a few words, sum up M. Bernard's conclusions in regard to the formation by the liver, during the time of digestion, of these three substances, sugar, fibrin, and fat, which correspond to three nutritive alimentary materials. It has long been admitted that the liver, by the secretion of bile, assists the lungs in the elimination of carbon from the system. Comparative anatomy demonstrates this by showing the antagonistic activity of its functions at the different ages and in the several degrees in the animal scale. In a somewhat different way than the lungs, the liver is a *depurative organ.* But Bernard has shown us that the liver, by these secretions, has also other functions. These new products contribute to establish the equilibrium in the blood, for the liver, no matter what the aliment is, transforms it into material fit for nutrition, and thus the composition of the vital fluid remains unchanged; the sugar, fat, and fibrin thus furnished repairing to the blood the loss of these substances continually given off. The liver has thus the office of preserving the blood in a state of health, and in a chemical point of view is the organ of *sanguification.* That it is also the organ for regulating the equilibrium of the circulation is evident from M. B.'s results in experimenting upon different animals in regard to the quantity of each of these productions, which he found was furnished severally in the proportion needed. That is to say, in carnivorous animals there is less fat secreted, because there is more taken already formed as aliment; in the herbivorous class, where there is much saccharine matter consumed, there is less sugar fabricated; and the less fibrin the stomach digests the more the liver contains. Consequently, in man, where the diet is so variable, his blood will receive that which it has most want of, and *vice versâ.* Thus the liver has these three important functions, *depuration, sanguification,* and *equilibrium.* M. Bernard alluded to the fact, singular enough, that three of the most troublesome diseases man is heir to consist of an excess of three of the products of digestion, of albumen in albuminuria, of fat in chylous urine, and of sugar in diabetes.

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* Maladies des Reins.

We ought not to omit to notice, in conclusion, that M. Bernard, on inserting a thermometer into the different veins, found that the temperature of the hepatic was two degrees higher than that of the portal, owing, he suggested, to the active and abundant circulation of the liver; and, strange to say, that the blood of the pulmonary artery was not of greater temperature than that of the pulmonary and other veins. What light this may throw upon the formation of animal heat future experiments may develop.

That some of your readers will object to the conclusiveness of M. Bernard's doctrines, we doubt not; but we would remind them that it is scarcely fair to sit with folded arms, and reason about the probability of this or that physiological fact, without fortifying their opinions by experimental researches. In giving in detail the experiments of this distinguished physiologist, we have a double object in view, not only because we think they would render the results clearer and more satisfactory, but also that others may verify or disprove them. It is in this way that Bernard has refuted the doctrines of those who preceded him; and he wishes to be so treated himself. He asks but for this, and it is his right. Theories and theoretical reasonings have been the bane of our science, and what we want in future is something more satisfactory and more enduring—facts, carefully noted and the statistical results given, in all branches of medicine. Bernard has certainly put forward many entirely new views, but we must leave the reader to judge whether or not he has substantiated them by experimental proof.

BALTIMORE, *April,* 1851.

ART. V.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

May 12. *Hydrocephalus.*—Dr. COALE reported the case of A. H., born January 14th, 1849. Parents healthy; first child. Dr. C. was called to see her when she was two weeks old; found her labouring under cerebral symptoms, which soon resolved themselves into undeniable signs of water on the brain. She was treated with small doses of calomel, and afterwards with hydriodate of potassa, with apparent benefit at first. The head, however, steadily increased in size. The general health was good except when disturbed by teething—at which time she had occasional spasms, never amounting, however, to a general convulsion.

	Measurement of head.	Inches.		Inches.
Sept. 12th, 1849.	Over crown from meatus to meatus	12½	Round	18½
Nov. 1st, “	“ “ “ “ “	13½	“	19½
“ 28th, “	“ “ “ “ “	14	“	20
May 10th, 1851.	“ “ “ “ “	17¾	“	23½

The family having moved out of town in Aug. 1850, Dr. C. did not see the child after that except at rare periods. The last time was May 10th, 1851. Her height is now thirty-one inches; she lies on her back; is blind, but hears, though imperfectly. The pressure above has forced down the vault of the orbit so that the eyeball seems lower, and more covered by the lower than the upper lid; much of the white above the cornea being exposed, whilst the cornea is half covered by the lower lid. The mouth contains the usual number of teeth. Motion of limbs perfect, but feeble, except of right arm, which is paralyzed almost entirely. Fond of throwing the left hand about, and with it occasionally feels the right arm, and resists any attempts to meddle with it. Extremities cold, making it necessary to keep a good fire in the room day and night through the winter. Never cries or frets. Takes, three times a day, ten ounces of milk, sucked from a bottle. Bowels open with regularity once a day.

The child died two months and a half after this, without any remarkable change.

May 26. *Otorrhœa of Twenty Years' Duration, terminating fatally from Hemorrhage.* Case furnished by Dr. F. H. GRAY. Dr. PARKMAN showed the specimen.—F. C., twenty-one years of age, of scrofulous habit, though having a good share of health, had been troubled with a purulent discharge of fetid character from the right ear, from infancy.

On the evening of April 10th, 1851, patient rode several miles on horseback, and on the following morning complained of general uneasiness, though sufficiently able to attend to his ordinary business. On the morning of the 15th, severe pain commenced in right ear, which continued for three successive days, at the end of which period, copious and offensive purulent discharges found their way into the meatus auditorius and likewise into the mouth. Patient was greatly relieved by the discharges, and was able to walk and ride out, though he still suffered from headache, until the morning of the 21st, when some coagulated blood was ejected from the mouth. Copious hemorrhage took place from the ear and into the mouth at intervals, varying in quantity from ℥iv to Oj, during the next twenty hours, when he quietly laid himself back, and expired. During the whole illness, there was an almost daily occurrence of vomiting, with the pulse unusually slow, possibly to be referred to the influence of narcotics.

At the autopsy, there was found a slight bloody effusion in the lower surface of the cerebellum, proceeding from a small gangrenous opening in the posterior surface of the right lateral sinus, just before it terminates in the jugular vein; the sinus was also ulcerated on the side next the petrous portion of the temporal bone, and blood was extensively effused into the cavity of the ear and into the cellular tissue behind the pharynx. The petrous portion of the temporal bone, sawn through and exhibited, showed the cavity of the ear deeply affected with caries, and undoubtedly the inflammation had spread from this point, involving the sinus. The specimen is in the Society's Cabinet.

June 9. *Ovarian Tumour.* Dr. Chas. E. Ware reported the case.—He first saw the patient (a single woman) June 29th, 1850. She was then fifty-nine years of age, and had perceived the enlargement of the abdomen for about a year. It had occasioned no inconvenience beyond a little embarrassment in walking. The swelling was occasioned by a tumour, hard and elastic, divided into three lobes. The central lobe appeared to originate from the fundus of the uterus, having the bladder directly between it and the pubis, and extending above the umbilicus. To the left of these tumours, between the crest of the ilium and the false ribs, there was another tumour, loose and flaccid like a half empty sac. Dr. Ware was called to see her on account of vomiting, and some disturbance of the bowels occasioned by the interference of the tumour. She was speedily relieved. She had similar attacks in July, September, and in November, at which latter time there was great fullness of the abdomen, and distinct ascites. She had, during this time, been taking the oxymuriate of mercury, and afterwards hydriodate of potash, without any distinct advantage.

In January, 1851, she had another attack of vomiting. At this time, the abdomen had very much diminished in size, and there was no appearance of fluid in the peritoneum. In the right groin, there was a group of enlarged inguinal glands; some of them as large as a hazelnut. No tenderness about them, nor signs of inflammation. At the time of her death, these had entirely disappeared. The tumours remained about the same, except that they were more distinct on account of the general emaciation. Up to this time, in the interval of her attacks of vomiting, or of diarrhœa, which would continue from a week to a fortnight, she was able to keep about. After this attack, she rarely left the house, and was often confined to her bed. She slowly wasted in strength and flesh, was able to bear little food, and had more frequent attacks of vomiting.

March 31*st*. She was seized with griping pain in the bowels, and some looseness. She took to her bed, and did not again leave it. Three weeks afterwards a more severe attack occurred, under which she sank, June 4th.

Autopsy.—Very great emaciation. No fluid in the peritoneum. The inguinal glands entirely subsided. The tumour arose from the left ovary. It had only one very slight adhesion, and that to the omentum. Although forming one mass, it was lobulated into four or five parts. One of these was a cyst large enough to contain a teacup of fluid. The fluid was about the colour of strong coffee. Another small cyst, about the size of an English walnut, contained a soft paste of a dark bistre colour, which, under the microscope, presented only brown granules and granular corpuscles. The other lobes, which constituted the mass, and would weigh four or five pounds, were solid, and had much the appearance of carcinoma. There were several small cavities in them containing a limpid fluid. The whole mass had a somewhat œdematous appearance. Under the microscope it presented cells, caudate, irregular, and nucleated, but no granular corpuscles. There was a distinct stroma similar to that of carcinoma. At the lower part of the small intestines, the membrane was intensely red, rough, and at points ulcerated.

There was no disease in any of the other organs.

June 23*d.*—Dr. SHATTUCK, Jr., reported the following cases:—

Chronic Dysentery, Diarrhœa; less after taking Oil of Turpentine—Peritonitis not revealed by Symptoms—Extensive Ulceration of the Mucous Membrane of the Large Intestine.—B. P., fifty-five years of age, born in Genoa, had been in America two years—during the last of which, had lived in Boston. He entered the Massachusetts General Hospital April 19, 1851, reporting himself as having suffered for two months from chronic diarrhœa and abdominal pain. He knew of no cause for his disease; of dark complexion, emaciated; six or eight yellowish stools in twenty-four hours; tenesmus; abdomen flat, rigid, not tender on pressure; appetite small; no fever. He was put upon a diet of boiled milk and lime-water, thickened with flour, or pounded cracker; took chalk mixture and paregoric, tannic acid and powdered opium; up to the 30th April, there had been no improvement. He now took half an ounce of the mucilage of gum Arabic with half a drachm of the spirits of turpentine, and fifteen drops of the tincture of opium, three times a-day. He had an ounce of cherry brandy in the morning; chicken and maccaroni for his dinner. May 17th, he was more comfortable; less abdominal pain; more appetite; two or three dejections every day. He took, for one day, three doses of the tincture of nux vomica, gtts. viii; had numerous dejections, with pain; the former medicine was resumed, and on the 21st he had but two dejections. He gradually lost strength, so as not to be able to walk about the ward; the 27th, he was in bed; no abdominal pain; no tenderness of abdomen on pressure. The 28th, the pulse was 106, small, feeble; prostration; no stool in last twenty hours; died that night.

At the autopsy, a half pint of pus was discovered in the abdominal cavity, the intestines being glued together by lymph, and their peritoneal coat and that of the cavity finely injected; mucous membrane of small intestines and stomach quite healthy. In large intestines, ulcerations commenced about two inches from the ileo-cœcal valve, small, round, numerous, several extending to peritoneal coat; six inches from the valve, three parallel strips of ulceration, three inches in length by three or four lines in breadth, extending to the submucous cellular tissue. Numerous small ulcerations in sigmoid flexure.

Chronic Dysentery—Sudden Death—Small Effusion of Blood between Dura Mater and Arachnoid—Peculiar Injection and Ulceration of Large Intestine.—Joachim, a Portuguese seaman, twenty-eight years of age, was taken with diarrhœa in a voyage from Batavia to Boston, and had been ill about ten weeks, Dec. 17th, when he arrived in this country. He ate indiscriminately; took no care of himself; continued to suffer from abdominal pain, diarrhœa, loss of flesh and strength, and entered the hospital April 18th. He was put on a diet of lime-water and milk, and pounded cracker; took astringents and opiates for several days. He continued to have seven or eight loose yellowish discharges in the twenty-four hours; occasionally, blood and mucus. He was then put on meat and rice, brandy and water, taking occasionally powdered opium or laudanum. Small epistaxis on the 21st; on the 29th, had a faint turn from which he recovered; ate his dinner with usual relish; died suddenly about five o'clock in the evening.

At the autopsy, a patch of effused blood three inches in diameter, rather more than a drachm in quantity, was found anteriorly on the right side between the dura mater and the arachnoid. The brain generally soft. The mucous membrane of stomach and small intestines pale, of sufficient consistence. The liver was healthy; its weight three pounds and a half. Injection in spots under serous and mucous membranes of large intestines, some of a bluish colour, some of a bright red colour, not corresponding to each other. Ulcerations small, circular; in some of these, patches of mucous membrane, extending to the cellular tissue. Mucous membrane of large intestines generally soft. Intestinal tube containing less of its secretions and fecal matter than usual, there having been free operations about the time of death.

Chronic Dysentery prevented by Oil of Turpentine—Strangury—Recovery.—Mary Bealy, a spare woman, muscular system sufficiently developed, healthy;

had had no long illness; had one attack of diarrhœa, which lasted about three weeks, in 1849. She came over to this country in August, 1850; suffered from sea-sickness during the voyage, which otherwise was pleasant; no fever or diarrhœa amongst fellow-passengers. She arrived in New York, and went immediately to live with her son; working moderately. She was taken with abdominal pain, and had six or eight loose stools in the twenty-four hours, with, occasionally, slime and blood, about a month after her arrival. She took pills, which controlled her discharges for a day or two at a time; occasionally she would have none. She entered the hospital June 10th, having had six or eight discharges a day for the last two weeks; pain; little or no appetite; tongue not remarkable; pulse 84; skin not remarkable; abdomen not full, tender on pressure. She took a pill with two grains of tannic acid and half a grain of opium twice a-day; five or six stools, with some blood and mucus. On the 11th, she took half an ounce of castor oil in a cup of flaxseed tea, which was followed that day by two doses, at regular intervals, of half an ounce each of the mucilage of gum Arabic, half a drachm of the spirits of turpentine, and six drops of the elixir of opium. She had three dejections on that day, none on the 12th; and, on the 14th, in the morning, she was attacked suddenly by severe abdominal pain. The house physician gave her a grain of opium and thirty drops of laudanum in a starch enema. Micturition bloody and painful. She took opiates and mucilages; was better on the 17th, well on the 22d, and left on the 30th, perfectly well in every respect, gaining flesh and strength.

These were the only cases of chronic dysentery in the medical wards of the Massachusetts General Hospital during the months of March, April, May, and June. There was one case of acute dysentery during the same period. Of one hundred and five cases of acute dysentery, which were received at the hospital during a period of twenty-four years, but three cases occurred in the spring months. Of nineteen cases of chronic dysentery, during the same period of years, there were also three in the spring. The peculiarities of these cases are, perhaps, sufficiently obvious without any farther comment.

June 23. *Poisoning from Eating of Strawberries—Eczema.* Case reported by Dr. ALLEY.—A gentleman ate freely of strawberries at noon. In the course of half an hour he was seized with nausea, which did not terminate in vomiting, but disappeared in about an hour. Towards evening he perceived a slight irritation upon his chin, accompanied with redness and itching. The next morning the whole of the right side of the face was swollen, and during the day the eruption extended across the forehead and over the left side of the face, and the swelling increased so as nearly to close the eyes. The same day, the eruption appeared on the anterior portion of the chest, on the scrotum, and extended down the inner side of the thighs. It was characterized by crops of minute vesicles, thickly crowded together; and upon the chin, and over the upper lip, appeared an exudation of yellow serum. The constitutional symptoms were slight, the patient complaining somewhat of pain across the forehead; restlessness at night. Pulse accelerated; complained of no pain in abdomen. Patient reports that, six years ago, a similar attack followed the eating of strawberries, but did not appear to be so directly caused by them. Has eaten them occasionally since, but not without some feelings of discomfort. The bowels were freely opened by saline cathartics, and a light diet ordered. In the course of five days, the swelling subsided, redness disappeared, and the skin was rapidly assuming a healthy appearance.

June 23.—*Severe Urticaria from Hyoscyamus.* Case reported by Dr. CABOT.—Mr. B. was suffering severe pain in abdomen, and as it was deemed important that the medicine which he had taken (castor oil) should be allowed to operate, he was directed to take a teaspoonful of tinct. hyoscyami every hour until he had taken three doses—unless he was relieved sooner from his pain. Soon after the first dose, he felt his lips swell somewhat, and became drowsy. After the second dose, passed a large quantity of flatus. About ten minutes after the third dose, his nose swelled very much, which swelling extended all over his face and body, growing less severe below his waist; this was accompanied with a prickly sensation and itching. The skin of the face was very red, shining, and hard; the eyes were shut; there was no interval seen until below middle of body, where bunches and irregular patches appeared scattered over the surface, and some smaller ones appeared like enlarged papillæ of the skin. He could hardly utter a word, owing to a "stiffness of the tongue and lips," as he expressed it; what he did say was with a thick, blundering manner, like that of a drunken man: his mind appeared perfectly clear. The eruption began to subside in about an hour and a half from the time the last dose was taken, and had almost or quite disappeared the next morning.

June 27.—*Gangrene of Appendix Vermiformis.* Dr. J. M. WARREN related the case.—The patient was a gentleman forty years of age. He had always been subject to what are called bilious complaints. About four years since, he was confined for some weeks to the house with a severe attack of colic, attended with constipation; and at this time Dr. W. observed a small hard tumour, tender on pressure, in the right lumbar region. Two years ago last October, he had a second attack, in which the pain was excruciating, and required the constant inhalation of ether and use of the opiates to relieve him. At this time there was a diffuse swelling in the right iliac and lumbar regions, quite hard and very tender. Under the use of leeches, and by inducing a slight mercurial action on the system, he slowly recovered. At this time, Dr. W., fearing some organic complaint, not only from the swelling, but from his great susceptibility to cold and disturbed digestion, advised him to relinquish business, at least so far as to allow him to have his mind perfectly free from any care, and to give him an opportunity of paying particular attention to his health. This he did, and has been quite free from any trouble until the final attack. This came on after exposure to cold and some irregularity in diet. The pain, for a day or two, amounted merely to a feeling of uneasiness, but gradually became excessive. A tumour could be distinguished, at this period, in the right iliac fossa, the size and length of the forefinger; was quite hard, and could be almost seized, through the integuments, and lifted up. The pain and tenderness were so great as to require the overpowering use of opiates, administered by enema. On the third day there was a slight evacuation from the bowels by means of an enema; but the patient shortly after fell into a state of collapse, and died on the third day after the violent seizure. For the last twenty-four hours there was the most distressing hiccough. On examination after death, extensive peritoneal inflammation was found to exist. There was very great induration of the omentum, with firm adhesions, arising apparently from the previous attack, two years before. Some purulent matter escaped from the cavity of the pelvis. The appendix vermiformis was found gangrenous and perforated at both ends, and in its central portion was contained a mass of indurated feces the size of a prune stone. On section of this substance, no nucleus could be discovered.

Amputation at the Shoulder-joint. Dr. J. M. Warren.—The patient was thirty-two years of age, and was brought to the Massachusetts General Hospital on the 16th May, his arm having been drawn in between the cog-wheels of powerful machinery used for pressing hemp, two hours before—the limb passed in up to the shoulder. The bones of the hand were found to be crushed, the radius and ulna not broken; the lower two-thirds of the humerus communicated, and an opening over the brachial artery, two inches below the axilla, allowed the finger to be passed in up to the joint. The limb was removed by an anterior and posterior flap. Some difficulty was experienced in disarticulating the head of the humerus, from the fact that the bone being broken below, no purchase could be had by which the head could be lifted from its socket. A powerful pair of forceps had been provided for this purpose, but the displacement was effected without having recourse to them. The patient has done well. Dr. W. stated that the case was interesting, as being the first case of amputation at the shoulder-joint that had ever occurred at the Massachusetts General Hospital. The patient, whose case was reported to the Society in January, when the limb had been removed at the shoulder-joint for malignant disease, was now perfectly recovered, and had resumed his occupations.

July 14.—*Traumatic Injuries of the Iris.*—Dr. Williams reported two cases where considerable violence done to the iris had been followed by a very trifling amount of inflammation.

The first was a case where an operation for artificial pupil had been performed upon the right eye of a farmer aged sixty-one. Inflammation of the eye occurred twenty-seven years since, producing extensive adhesions of the iris to the cornea, and a dense leucoma which covered the lower half of the cornea and the small portion of the pupil which remained unadherent. The other eye was lost last March. In performing the operation, a portion of iris was drawn out through a wound of the cornea, and a sufficient portion excised to form a pupil of rather more than the average size, towards the outer canthus. This was accomplished with some difficulty, the manœuvres being impeded by the extensive adhesions. Yet no inflammation followed. The patient might have gone out the next day, except that prudence forbade his doing so, and he actually did go out on the fifth day after the operation, seeing well enough to guide himself. His sight continued to improve, and he returned home to the country on the twelfth day.

The second case was that of a young man of twenty who was wounded by an explosion of a bottle of "mineral water." The fragment of glass divided the cornea horizontally in its whole extent, at the level of the lower edge of the pupil, and the wound extended so far into the sclerotica as to make its whole length half an inch. The iris protruded through the whole of this long wound, the pupil being deformed, and the entire substance of the iris put upon the stretch. This long hernia of the iris was greatly distended by aqueous humour accumulated behind it, and, it being impossible to effect its reduction, it was punctured with a cataract needle. The aqueous humour escaped in a jet, to the distance of three feet, and the tumour instantly collapsed. It became, however, re-distended on subsequent days, and the puncture was repeated four or five times. This proving ineffectual, a portion of iris was excised at the centre of the ridge, and from this time it remained collapsed until union of the edges of the wound was accomplished, the iris forming a portion of the cicatrix. No increase of the ocular vascularity followed these operations; but, on the contrary, the patient was relieved from the sensations of pain and tension he had before experienced. He promptly recovered, and a fortnight after the accident, there was no appearance of commencing traumatic cataract, but vision continued good. The glass must have struck obliquely, and glanced off, without penetrating the globe.

July 14.—*Syphilitic Ulcer on Glans Penis, and Syphilitic Tubercular Eruption on Skin, fifteen years after exposure.*—Dr. DURKEE exhibited a patient, a married man, who consulted him about the first of May last, on account of an ulcer on the glans penis. At that time the ulcer encircled the orifice of the urethra, and was about the size of half a dime. Three weeks before calling upon Dr. D., the patient discovered a small pimple close to the lower edge or border of the orifice, and made known his trouble to one of his neighbours, who attempted to cure it by applying a decoction of various roots and herbs, and an ointment of resin and hog's lard, &c. The pimple soon became an ulcer, and the inguinal glands on both sides became swollen. Patient states that fifteen years ago he contracted gonorrhœa, which yielded to treatment in a few weeks; that he never had been exposed except at the time above mentioned; and that he never had chancres externally. Although the ulcer was of a suspicious character, yet it was difficult to judge how much its appearance might have been modified by the applications which had been resorted to. Patient was put upon the use of iodide of potass in syrup of sarsaparilla, fifteen grains daily, for two weeks, and then increased the quantity to twenty-two grains daily for three weeks longer. It was then discontinued in consequence of a minute papular eruption with slight erythema, which it had brought out upon the face, chest, &c. This eruption faded away in a few days, and was followed by genuine syphilitic tubercles sparsely disseminated upon the face, head, back of the neck, and other parts, where they have remained with characteristic persistence, and without manifesting any disposition to ulcerate, up to the present time. Upon laying aside the iodide of potass, patient was put upon the internal use of dilute nitric acid, and lastly upon mercurials. Topical remedies, black wash, aromatic wine, nitric acid two drops to the ounce of water, cold water dressing, saturated tincture of iodine, saturated solution nitrate of silver, &c.

Patient was a sort of country trader, and was engaged in various speculations which he did not choose to entrust to any one else; it was impossible to prevail upon him to keep quiet for any length of time, and the desired effects of the remedies were thus in a great measure defeated. On two or three occasions, he took board in the city for six or eight days, during which time some amendment would take place. He would take courage from this, and insist that he was well enough to go home. Complained somewhat of Boston charges, and said that he would take the responsibility of the case upon himself; and that, if it did not go "on to his mind," he would take the blame. In this way the case progressed from bad to worse. The ulcer spread over a large portion of the glans penis, which became a good deal swollen, and the use of the bougie was required. The cervical glands became enlarged, fauces inflamed, deglutition painful, nocturnal pains in lower extremities, and the patient had but little sleep. He at length got thoroughly frightened, relinquished business, came to the city under the apprehension that his disease was of a malignant character, and that he would lose a portion of the penis if he did not get help soon. He now expressed a willingness to remain in the city, without regard to expense, as long as might be necessary. During the last few days, a favourable change has again taken place. His case excited particular interest from the fact that so long a time had elapsed since the virus was imbibed into the system.

ART. VI.—*The Microscope, and Renal Affections; and particularly that condition of the Kidney known as Bright's Disease.* By W. J. BURNETT, M.D.

WITHIN a comparatively recent period, medical science has gained two powerful auxiliaries; and which have contributed to a more rapid, and at the same time a surer, progress in its various departments than at any previous time. These are, Organic Chemistry and Microscopy; the one seizing hold of matter as to its constituent, the other as to its anatomical, elements. And, although for the most part they have been obliged to be pursued separately, yet, with a good fortune for science, their results have generally closely corresponded. From organic chemistry, undoubtedly, have the most progress and the greatest benefits been derived. But this is due to its having had the most numerous disciples, and the means by which it has been pursued having been more perfect than those of microscopy. This last seems to have sadly suffered from bad instruments as well as from bad observers. Its results, therefore, until quite lately, have been less decided than those from chemical analysis. But now, in the days of better optics, this difficulty is not to be tolerated; and in discrepant results we must shift their causes from the instrument to the observer. It is mainly due to microscopy that physiology and pathology have lately become very great mutual aids. As I have said in another place, pathology seems to be but an errant physiology, and often where the typical characters of function are very difficult to be traced in the latter, they peer out in the abnormal relations of the former. The microscope, in elucidating the ultimata of anatomy, does not grasp physiological action; but, by showing exactly what the material agents of a function are, we can comprehend all that should be expressed by that word. Beyond this we cannot go at present, and perhaps never will. Secretion, that corner-stone of organic life, is now understood to be due to the action of cell-membranes; but it will be a long time, I think, before microscopy shall have explained why an epithelial cell-membrane of the mammæ eliminates milk, while one of the liver eliminates bile.

But it is to the development which this science has given to cell-genesis and cell-agency that its greatest benefit to physiology is to be referred. For, if everything is not cells, as has been thought, yet the cell-doctrine is so widely true that it may be said to embrace pretty much all we know of organic life. We have been led, of late, to give the word Nutrition a more pregnant meaning than before. It is, however, based upon cell-action. Through what the microscope has done to illustrate this very nutrition, it enters upon the wide field of intricate pathological science; for, within a few years, many of the best pathologists have referred to what has been termed *abnormal* nutrition, the great part of that class of actions that have their expression in the phenomena of disease. Of course this makes us look to the nutritive fluid, the blood, as the great source of all morbid action, and so we are led, on scientific principles, back to the "humoral pathology" of other days.

The health of an adult organic form may be briefly expressed as that condition in which the delicate balance of decay and reparation is so preserved that its physical identity is continued. From the capillary blood-vessels is effused the plasma, a basement material in which all cell structures arise, and from which are replaced tissues passing away. The intimate nature of this plasma takes on the type of the tissue in and for which it is effused; this is one of the reasons why the part is so exactly replaced. This constitutes normal nutrition. But when there is an unnatural condition of the blood, from a want of a healthy ratio of its elements, or a want of a correct relation between it and its containing vessels, this plasma does not appear to preserve its type-power, and, after its effusion, is not readily and faithfully appropriated. Hence, true nutrition ceases, and here begins what is understood by *abnormal* nutrition.

This abnormal nutrition may be above or below the natural standard: with the former, it is expressed by homomorphous; with the latter, heteromorphous products. Under the vague yet comprehensive term *inflammation* is included pretty much the same class of phenomena, but not thoroughly so; for, although we may say that in the inflammatory process there is an abnormal nutrition, we cannot yet say that all abnormal nutrition is of an inflammatory nature. The decision of this question, indeed, appears of little scientific importance, because we know little or nothing of inflammation except from its subjective phenomena. But this much appears certain, that the more the microscope is made to bear upon the early condition of diseased parts, the more are we led to think that the disease is based upon, or very quickly succeeded by, an inflammatory process. I think this particularly true of the diseases of the secreting organs of the body, whose very function and connection with the vascular system subject them to it more than others.

The viscera we can rarely have for examination during their earliest diseased condition, and, even if we do, the unaided eye is not able generally to recognize it on account of its interstitial and very elementary condition. The value of microscopy in this relation can scarcely be rated too high. But I especially appreciate its aid in deciding between post-mortem changes and real commencing disease; a decision that can in no way be positive in many organs with the naked eye, as I shall have occasion to illustrate in the following pages.

Then, again, our opportunities for the examination of an internal organ may occur long after the disease first appeared; it once existed, but has long passed away, and we see only its direct or indirect results. This is true of inflammatory more than of other diseases; it (inflammation) may have left the organ, as it nearly always does, with an impaired nutrition, below the natural standard; and with an *infra* nutrition for a period of time. Such curious changes occur then, that, judging from gross appearances, we lose all sight of the primitive disease. Now, unless it is in quite young subjects, the inflammatory process always leaves its tracks behind it in a more or less tangible form, at least so that they can always be appreciated by the microscope, if not otherwise. I have already alluded to the value of these studies with the secerning organs of the body. But I know of no organs upon which these studies are more needed, for our correct comprehension of their diseased condition, than the *kidneys.* Aside from the manner with which practical experience has shown it to be true, it is apparent from the very structure and function of the organ. The kidneys are *excreting* organs; at any rate, their function does not seem to be one of a proper *secretion.* Their anatomy is as delicate and intricate as that of any other organ in the body, and their physiological importance is of the highest character, since they form the two great emunctories of the economy—and very slight pathological changes have both a corresponding intricacy and importance. Very slight deviations from their normal structure and function by disease give rise to very fully expressed pathological phenomena throughout the whole system. This importance has led pathologists to turn their attention very actively to these organs, but not with that amount of success, or that uniformity of result, that has attended equally zealous studies upon other tissues.

But, of all its diseases, that called Bright's disease is the most important, and although it has received almost unlimited attention, it is the one about which the widest difference of opinion has prevailed, and still prevails.

Its early history is well known, being first pointed out and its relations shown by Dr. Bright in 1827; and it was by him and Dr. Christison very thoroughly studied under the name of *granular degeneration of the kidney.*

Dr. Bright's investigations did not lead him to regard it of an inflammatory nature essentially, although inflammation might be one of its elements in some stages. The same may be said of the labours of Dr. Christison, who, however, took up more thoroughly the chemistry of the subject. After Dr. Bright, come the works of Gregory, Osborne, and many others, who, although they added largely to the experience in the disease, did not contribute much towards the elucidation of its intimate nature.

In a work soon after published, Rayer regarded the nature of the disease in a somewhat different light; it appeared to him as essentially a form of *nephritis,* which he called "néphrite albumineuse," in fact a *nephritis* attended with albuminuria; and the thoroughness with which the subject appears to have been studied, and the vast array of facts and cases for its illustration, have not their equal in the whole history of the disease.

The work of Rayer merits especial attention, not only because of the comprehensiveness with which the subject is treated, but because he has, I think, more than many others, regarded the affection, as subsequent and more intimate study would seem to show it to be, viz: of an inflammatory character, at least so, if it is a purely renal disease. It is not for me here to run over the bibliography of this affection. I have mentioned some of the authors who studied it previous to 1840, and whose eminence has made them authorities. I pass over to the more recent period, since the microscope has been used in this direction. I should, however, mention that in 1839, at the suggestion of Rayer, Valentin subjected this disease to microscopic examination. His results were, that the tissue was infiltrated with granular and albuminous matter—in fact, that this organ is the receptacle of an albuminous exudation from the blood, and that this constitutes the disease; thus lending support to the views of Dr. Graves, advanced a year previous. (*Med. Gaz.* 1838.)

Gluge (*Anat. Mikroscop. Untersuch.* 1841) was inclined to regard the disease as of an inflammatory character, judging from the microscopical appearances it presented; there being the inflammatory corpuscle, &c.

Eicholtz (*Müller's Archiv.* 1845), in an article on the relation of this disease to that of the liver, maintains that it consists in the appearance of a new fibrous tissue in the kidney, or, to use his own language, "It is characterized by excessive development of a substance resembling fibro-cellular tissue, by which the peculiar glandular structure of the affected organs becomes compressed, and their function interfered with."

This view, a similar one to which was put forth by Henle some years previous (*Henle und Pfeiffer's Zeitschrift,* 1842), we shall refer to on a subsequent page.

In 1845, Dr. Geo. Johnson, of London, proposed a view quite different from the views of all who had preceded him (*Med.-Chir. Trans.* vol. xxix.), and the singularity of which, I confess, led me to turn my attention more particularly in that direction. To use his own words, "The disease then appears to be a fatty degeneration of the kidney, precisely analogous to the fatty degeneration of the liver." Since the appearance of his first article, several others have been published, all having the same bearing, and corroborating the doctrine first advanced.

There are without doubt some facts that apparently support this unique view, but I am not aware that it is generally recognized as tenable by leading pathologists. It is mainly to show that some carefully made experiments of my own have quite a different bearing, and that another view is tenable, that this article is written. To facilitate the comprehension of several succeeding points, I shall begin at the beginning, and state briefly the minute structure of the organ. It consists of the following: 1st. *The fibro-cellular matrix.* This is the framework of the others, and it is in and through it that they pass. 2d. *The Malpighian body.* This is the excreting organ, and consists of a bunch of terminal arterial vessels encased in an infundibuliform dilatation of the urinary tube. 3d. *The urinary tubuli.* These are tubes of about $\frac{1}{500}$th of an inch in diameter, lined with a very delicate basement membrane which is studded with epithelial cells. These tubes are tortuous and branching in the cortical or secerning portion of the organ, while they are straight in its medullary part. The epithelial cells become more and more delicate as they pass up from the calyces to the Malpighian body, and those lining the expanded portion of the tube about this last, are quite transparent.

It will be noticed that the above is according to the views given by Mr. Bowman, with which both my anatomical and pathological experience coincides. We have then a delicate mesh-work, through which permeates a system of fine tubes that end in a system of most delicate blood-vessels, which last have an arrangement for the transudation of a part of their contents into the former.* The question whether or not free fat exists anywhere in the healthy human kidney is of much importance, as bearing upon doctrines of disease. It is best decided, I think, by reference to results obtained from lower animals, for the artificial habits of man have changed somewhat the molecular condition of some of his organs. I think, with Dr. Gairdner (*Contributions to the Pathology of the Kidney*), that free fat does *not* belong to the normal human kidney, and I base my opinion upon a series of observations I have lately made upon many of the higher animals in both a wild and domesticated state.

In quite a number of species of the *Rodentia*, and some of the *Carnivora*, living in their natural wild state, I have never been able to find any free fat whatever. From this, I think it fair to conclude that, whatever may be the generality of appearances now presented, the human healthy kidney should have no fat, which would be the case, perhaps, if man was not at all artificial in his mode of life. Now, although the presence of free fat in the kidneys of man and the higher animals may be an *abnormal* condition, yet I think we are scarcely warranted in saying that all such kidneys are diseased; because experience has shown that it does not, unless completely surcharging the organ, interfere with the discharge of its normal function. The investigations of Mr. Simon (*Med.-Chir. Trans.* vol. xxx.) go to show that it depends upon irregular and unnatural conditions, and does not particularly affect the action of the organ. But that I might have the satisfaction of my own experience, I lately made a series of examinations for this object. They led to the same results. I found that, in wild animals, confined pretty closely and then well fed, free fat began to appear in these organs. The same I found true of numbers of old dogs and cats which lay in and about the house, their life passed in sleeping and eating. In all of these, the health appeared to be good, and in the few opportunities I had for observation there appeared no change in the discharge of the urinary function. In all these cases, I found the fat existing in the epithelial cells that line the tubes; often it was found in such quantities as to have supplanted the cells, being more abundant in their straight than in their tortuous portion. In no instance did I find it extend to the Malpighian body, which always presented a normal aspect. This, I think, satisfactorily accounts for the correct character of the function, and although fat and epithelial cells loaded with fat may be found in the urine, as has often occurred to me, they in no way argue that the urine is not of itself normal, and was not normally excreted. Fat existing in these relations cannot, I think, ever lead to much harm, or be of a serious import, unless it be in such quantities as to obstruct the free passage of the excretion, or is an expression of that retrograde metamorphosis of tissue of which I have elsewhere spoken.

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* To one who is not acquainted with it, the structure of the kidney cannot be explained without the aid of diagrams, and in the above brief description I have presumed much on the reader's knowledge, it being given only as a groundwork of the subject.—Vid. *Cyclopæd. of Anat. and Physiol.* pts. xxxii. and xxxiii. art. *Ren*, for a thorough illustration.

Dr. Johnson, in his various papers, regards this form of fatty kidney quite different from another which he thinks exists, and which is the one in his opinion constituting true Bright's disease. If he refers to free fat existing in another form as a primary product, I must say that such diseased condition of the organ has not fallen under my experience.

During the late appearance of cholera in 1849 in Boston, I had an opportunity to make a series of examinations as to this point in the human subject. Many of those who died were of robust health before attacked, and, as far as could be learned, were not subject to disease.

Aside from the slight desquamation of the epithelium from the tubes, and which belongs to the disease, the organs from different subjects presented microscopically a variety of appearances as to the presence of fat in their structure, indicating conditions of long duration, and quite distinct from that belonging to the disease of which they died.

It would appear, from what I then observed, that this kind of fatty kidney is not uncommon with the low classes of people, who are unfortunate in their conditions of life, whose food is bad and unequal, and living, withal, in an impure atmosphere.

In these cases, as in the animals above mentioned, the fat existed in a free form both in and out of the epithelial cells—the Malpighian body and its tubular sac remaining intact.

Associated with this fatty condition of the kidney was the same condition of the liver in most cases; which late experience has shown to be not uncommon in the classes of people I have mentioned.

On a subsequent page will be found a case, or cases, illustrative of this condition of the organ occurring under somewhat different circumstances of life.

Such are the relations of the presence of free fat as a primary product in the kidney; and, as a deposition, it must come in that same category, as the presence of the same in other tissues, with individuals in whom this fatty crasis exists generally. And I repeat that I think it may exist in these organs to quite an extent with impunity, in fact, until by its great quantity it may impinge upon either the excretory or efferent structures of the organs; then it is disease, because the function is impaired; which, in my opinion, occurs with a rarity bearing no proportion to the number affected with what is termed Bright's disease.

It is now for me to take up the subject proper, and describe what I consider to constitute the real pathology of this disease; to point out some of the structural and functional peculiarities consequent upon its primary invasion, and to show how some of these secondary results may have been taken for the primary disease itself. In the first place, I should say that the term "Bright's disease" has been objected to by many, on the grounds that it expresses nothing of the nature of the disease, and its experience includes several different diseases. All this is very true, and especially the latter, if we adopt Dr. Johnson's view of the subject, for he says, "Acute and chronic desquamative nephritis, and fatty degeneration of the kidney, include the greater number of those cases to which the term 'Bright's disease' is commonly applied."

But I am of the opinion that the term should be preserved, not only because it honours and preserves the name of him who first described it, but because the disease Dr. Bright intended to describe is, in my opinion, single, and primitively of a uniform character.

There are many reasons why, in pathological experience unaided by the microscope, doubts should exist with some as to what class of morbid appearances should be intended to be expressed by these terms. This arises from the fact that the kidneys, more than any other organs of the body, simulate, from post-mortem changes, a variety of morbid aspects; and then again the disease really existing may not be at all apparent to the naked eye. This is so true that I have frequently heard professed pathologists declare that they are often unable to decide whether the organ before them is healthy or diseased.

On subsequent pages will be found cases, one showing that although albuminuria and other symptoms of this disease existed during life, the post-mortem showed that, according to *gross appearances*, the organs must be reckoned healthy; yet the microscope showed disease; the other showing that although the patient had no urinary or renal symptoms whatever, yet after death there were found gross appearances exactly like those of Bright's disease, the microscope showing it to be due to a curious congestion.

Cases like these may, perhaps, show why it is that some authors have declared that they have met with true albuminuria and other symptoms of the disease, with no pathological appearances whatever to correspond; and also that they have met with all the pathological appearances without a corresponding symptom. I will add that all this well illustrates how we are obliged ultimately to refer to minute investigations to correctly define the nature and nomenclature of a disease.

Bright's disease appears to me to be one of a decidedly inflammatory character; it is primitively an acute, or a subacute nephritis.

This opinion I have formed on the following data: 1st. Its general and symptomatic character. 2d. Its close relation with diseases of other organs of an inflammatory type. 3d. Its relation to pure nephritis of scarlatina. 4th. The microscopical appearances presented, there being invariably an inflammatory product found. And 5th. From the fact that such view enables us to reconcile pretty generally the phenomena of the disease.

Such being the heads, we will now take them up in detail:—

1st. *Its general and symptomatic character.*

It is not the good fortune of medical science for us to be often able to observe the very first symptoms of some diseases. This is especially true of the disease under consideration. Its commencement is, in the majority of cases, insidious—and the individual presents himself before you after the preliminary symptoms have passed. Still, I am of the opinion that, however obscure may be its commencement, yet if it can be carefully observed, it will be found attended with inflammatory symptoms, though sometimes of a quite light and transient kind; there may be no "lumbar pain," but there is a slight general febrile movement, some quickening of the pulse, and a feeling of general *malaise.*

But the history of recorded cases shows that in very many it is ushered in with well-marked symptoms, such as general febrile action, headache, local pain, &c. &c. These may be of very short duration, and the disease, once commenced, may pursue a course so chronic, that one would never mistrust its primitive type. This is certainly one reason why it has been considered by many as a non-inflammatory affection. Thus I have noticed in several cases I have carefully watched that for week after week, although there was constant albuminuria, I could find no febrile action, and the skin and pulse were normal. But at irregular intervals, there would suddenly appear a febrile movement, attended with local pain, and, although lasting but a few hours, was always followed by a greater quantity of albumen in the urine.

Where an inflammation of an organ passes into a very low chronic form, the nutrition of the part is so much altered, in fact becomes so low, that it is exhibited, if I may so express myself, little or not at all in the general system; and, like an indolent ulcer, it may exist for a long period of time, having none but local influences and relations.

When it occurs idiopathically, its etiology, according to all experience, shows that it can nearly always be referred to the same exciting causes which produce inflammatory affections in other organs. Such are exposures to sudden changes of temperature, to fatigue, and dampness; and, according to the accumulated experience of Rayer and other authorities, it is most common in the professions which habitually place men under these unfavourable circumstances of life. I am not aware, however, that the tendency of such experience is to show that these hard-working, muscular people are at all predisposed to fatty degenerations of any kind.

2d. *Its relation to diseases of other organs of an inflammatory type.*

Although Dr. Bright, in carefully studying this disease when it was first known, did not regard it of an inflammatory nature, yet he perceived that there was co-existent with it a general tendency in the system to inflammation. He was, therefore, induced to regard it as the real cause of various diseases of other organs, such as the heart, lungs, pleuræ, and liver, which seemed to supervene upon its presence.

He thought that the retention in the blood of elements that should be eliminated by these organs led to such alterations of its character, that these affections necessarily supervened. Of the coexistence of these affections there can be no doubt; and there are many recorded cases which would lead us to look upon the matter in the light of cause and effect. But since the early memoirs of Dr. Bright, and since experience has been accumulating in all directions, the medical world has been somewhat at variance as to what interpretation should be put upon these coincident phenomena. This has arisen from the fact that, after the review of a great number of cases of this kind, in very many, if not the majority, the diseases of the other organs have been found to be more chronic and of longer duration than that of the kidneys. And the more is this found to be so, as opportunities are the more abundant for carefully learning the patient's previous history.

The following questions then arise: When it thus occurs coincidently with these other diseases, are we not to consider the whole as a *blood-disease*, producing a low inflammatory tendency throughout the system, these organs being those in which it is expressed? Or are we to consider each as a local disease, producing, after a time, those changes in the blood that successively give rise to the affections of other organs?

At this time, the former view is most in accordance with observation—and what appears remarkable, it is supported by that very same class of cases which have been construed for the latter.

This is the view which has been adopted by Rokitansky (*Pathol. Anat.*, Syden. edit. vol. ii. p. 185), and since then by Rees (*On Diseases of the Kidney, &c.*, London, 1850), and Walshe (*London Lancet*, July 14, 1849). The opinions of such authorities as these, certainly, aside from other considerations, entitle this view to some weight. Moreover, it appears in accordance with some of the leading doctrines of the more modern pathology, which, by the light thrown upon them by organic chemistry and microscopy, appear to be recurring to those of other days.

Aside from the general tenor of cases, it is supported in the fact that all, or nearly all of the co-existent, connected diseases show themselves to be of a low inflammatory character. Such is the arachnitis as shown by Dr. Osborne, and the bronchitis, pleuritis, and peritonitis, and the pseudo-rheumatic disease which have been described by others.

But still more is this view supported by the fact of this disease supervening upon other diseases of a purely inflammatory character, or which have many inflammatory characteristics, having also a distinct and isolated origin. Such are chronic pleurisy and pneumonia, and especially phthisis. Recorded experience is quite full on this point, for it has at the outset arrested the attention of all observers. In chronic pleuro-pneumonia and in phthisis I have had the good fortune to have opportunities to see it, and that, too, under circumstances permitting careful examinations before and after death, from which I was satisfied of its very short duration. At the end of this article I have introduced one of these cases as illustrative of this point.

I can see of no other construction to be put upon such phenomena than that a local inflammation, existing for a length of time, leads to a general dyscrasia; a low inflammatory tendency generally, and which would quite naturally have its expression in such an organ as the kidney, in which the nature of the blood is so carefully analyzed.

When occurring in those cases of phthisis that have fallen under my observation, there being many of the symptoms of true Bright's disease, I have been unable to see in these very emaciated subjects the least ground for supposing a fatty degeneration of the organ.

3d. *Its relation to nephritis of scarlatina.*

In studying the intimate nature and pathology of Bright's disease, the phenomena presented by the kidneys in scarlatina are of great importance, for from their unmistakeable nature they give something of a positiveness to our conclusions.

The recognition of renal trouble as forming a part of this affection is really of modern date. I am aware that it was hinted at by writers of twenty or more years since; and Rayer, in his comprehensive work (vol. ii. p. 429), in speaking of the few opportunities presented him, says that he "has noticed that the organs were quite often hyperæmic," &c. The recurrence, however, of this epidemic within a few years, under circumstances admitting of its most careful study, has given a decided character to the feeble views before entertained.

We now recognize it as a part of the disease, and I have been informed that, lately in London and Edinburgh, with some obscure cases in which the cutaneous marks were quite dubious, or did not exist, the disease was successfully diagnosed by the more prominently marked renal symptoms.

Aside from quite numerous papers found in various journals, the work of Dr. Miller (*The Pathology of the Kidney in Scarlatina*, London, 1850), recently published, shows the attention this subject has of late received.

In this disease it would appear that a morbific agent has been introduced into the system, having its expression in the cutaneous and mucous surfaces.

Whether the excited and inflammatory condition which the kidneys here presents is due to the direct action of the poison itself, or is indirectly due to the sudden and almost complete cessation of the cutaneous function, I am unable to say. But I think most probably the latter, since I have noticed similar renal troubles in patients affected extensively with other cutaneous diseases.

The point, however, is of no great importance in this matter; for you have, at any rate, an unmistakeable nephritis, supervening upon, or forming a part of, another disease. Consequent upon, or at least co-existent with this nephritis, you have, for a brief period, all or nearly all the symptoms of true Bright's disease.

Dr. Johnson, however (*Med.-Chirurg. Transact.* vol. xxix.), does not view it as such, and thinks the phenomena here presented should come rather under the head of desquamative nephritis. But this appears to me quite unsatisfactory, for I consider *every* nephritis as desquamative, and almost necessarily so; exactly as is every inflammation of the true skin. This point needs some explanation as well as another, often urged, viz: the dissimilarity of this disease from true Bright's, as it commonly appears, as to its transient and curable nature.

In every inflammation there is a cessation of the normal nutrition of the part in which it occurs, and, if any nutrition at all exists, it is with the elimination of abnormal products. When, therefore, it exists in the kidney, an organ as we have seen of most delicate structure, the lost balance between the decay and reproduction of a part is quickly perceived. The epithelial cells, forming so large and important a part of its structure, cease to be nourished—they therefore "drop off" from the basement membrane to which they are attached, and minute granular, oleo-albuminous matter occupies their place, and we have then presented, both in the kidneys and in the urine, all the appearances of desquamation. Now, according to my own experience, it is of no account whether the renal inflammation be due to one cause or another; and I have alike witnessed these phenomena in cases of inflammation with tuberculous disease, and in common nephritis. To be sure, in a disease so acute in its action as that of scarlatina, the phenomena are best marked.

In regard to the second point, the transient and curable nature of the affection generally, it corresponds with our best ideas of the nature of nutrition and inflammation. In the first place, I should say, that the more recent experience with diseases of children, and since attention has been paid to examination of their urine as far as practicable, albuminuria and some of the other symptoms of nephritis are found to be with them of not uncommon occurrence, and yet of a very transient nature, coming and going like a light inflammatory trouble of the mucous air-passages. I have had occasion to see instances of it supervening upon severe infantile diseases.

It is well known that inflammation, as it exists in children, is somewhat different, as to its characteristics and results, from that of adults. There seems to be a far less departure from the normal nutritive type of the part, and if the normal nutrition is entirely suspended, there is not a marked tendency to an abnormal one leading to the production of adventitious products. And, if I may so express myself, the *type-power* of the part is still so active that its peculiar nutrition is not easily displaced, and when the disease subsides, the part soon gets back to its former condition. This is fully illustrated in every department of infantile pathology.

This is truly so with the kidneys in scarlatina; the vigour of the normal nutrition soon places the part as the disease found it; and although a most delicate structure, it preserves its proper continuity. In surgery, with infants, we well know that the younger and more vigorous the child, the more perfect the repair. Exactly so is it, I believe, in scarlatina, and I have now in my mind some cases a friend related to me, in which adults having scarlatina, the renal symptoms never left them, but passed on to common Bright's disease. This has shown to me that, although nephritis may occur with impunity in children, it rarely does so with adults.

4th. *The microscopical appearances of the kidney in this disease.*

We have already been over the symptomatology of the disease. It now remains to refer to the material expressions of the disease as elucidated by microscopical inquiry, and it is hoped that the two may be made to appear quite compatible.

The conditions in which you may find the tissue of the organ after inflammation vary so much according to the duration or original severity of the latter, and its injury of the normal nutrition of the part, that some explanation may be necessary. But that this may the better be done, I will allude briefly to the gross appearances.

Dr. Bright thought that these might be considered as *three.* The first being that of ordinary congestion; the volume of the organ being much increased, the cortical substance being most abnormal in its aspect. The second is the true granulated kidney, there being apparently a granular deposit in the organ giving it the peculiar mottled aspect. The third is that of the most advanced stage; the organ is generally of a decreased volume, is contracted, and has a hard and often cartilaginous feel, with a pale anæmic aspect.

The first may be considered as that of the disease proper, and the last two as those of the results of the disease.

Rayer still farther divided the aspects, making *six* forms—perhaps a rather too detailed subdivision, since it somewhat complicates the subject. I need not here notice these divisions: but will only add that the first three correspond to the first of Bright; the fourth and fifth to the second; and the sixth to the third. Dr. Bright's division of the pathological appearances seems both the most simple and judicious, as it corresponds very closely with the progress and results of the disease.

We will now see how the microscopical correspond with the gross appearances, at the same time alluding more carefully to the details of the latter. The disease being originally in the vascular portion of the organ, it is to this that we are to look for the primitive lesions—the alterations of the other tissues being referable to this, either directly, as from mechanical agencies, or indirectly, through the affected nutrition.

In the few cases in which I have had the good fortune to be able to examine the organs in the early part of the first stage, I have found the arterioles and Malpighian bodies turgescent and increased in size, the latter often misshapen—phenomena which I think are not observed in simple *non-inflammatory* congestion of the vessels.

The size and general aspect of the tubes in this stage do not appear much changed, and the abnormal appearances are to be looked for in their contents.

An inflammation can exist but for a very short time in the organ before its effects are very appreciably perceived in the delicate epithelial tissues. The epithelial cells of the tubes of the cortical substance are found to have lost their natural delicate character, and to have a somewhat shriveled aspect. Moreover, there is some exfoliation, and both in the place of and in the cells will be found fine granular matter, and not unfrequently free fat in fine globules. This condition extends up to the Malpighian bodies.

The granular matter and the free fat I conceive to be the direct products of the inflammatory action. The healthy nutrition being suspended, the hyaline blastema which is effused from the blood-vessels does not suit the wants of the tissues to be nourished, and therefore is not taken up and appropriated; moreover, it is of a low character, and not capable of cell-attainment—resting on its granular stage of development. These granules, as I have elsewhere observed, consist of a minute particle of oil surrounded by an envelope of albumen; in fact, they are *utricles*, and not granules. In their process of formation, according to the *Acherson* mode of the formation of cells, if, whether from the quantity or the quality of the albumen, the conditions are not harmonious, the superabundant oil remains as such in the form of free globules. In all effused blastematous fluids, we know that oil forms in some shape a very important ingredient; and especially is this true of most inflammatory products in which the natural relations of the constituents among themselves is partially lost.

The very fact of the oil particles and utricles being in the cells, shows that they could get there only through the dyscrasia of the blastema.

Engorgement of the vessels throughout with the presence of granular matter in place of or about the passing away epithelial cells, besides often free fat, constitutes the microscopical appearances noticed at this stage of the disease. The alteration of the other tissues belongs properly, I think, to Dr. Bright's second form, the true granular kidney; although, strictly speaking, the changes we now see are referable to the agency of the first condition.

In the second stage another condition of things exists, the more active inflammation appears to have subsided, and what remains is of a low indolent character. Therefore, although we may see the effects of all this in the vascular system, yet the condition of the other tissues is what most arrests our attention. I may also remark that the feebleness of vascular action generally, which commences in this stage to be completed in the next, gives to the vessels often a less than their natural fulness.

The natural relation of the fibro-cellular tissue to the vessels and tubules, of which it is the supporting structure, is lost. From the abnormal nutrition it becomes hypertrophied locally or generally; in the former case giving rise to those small white spots, which, at this stage, are disseminated throughout the organ, and entitle it to the name of *granular*. Then again it may become atrophied, or more consolidated, leading to contractions and other appearances which we shall soon notice. In and about this fibro-cellular tissue is effused more or less of this inflammatory granular matter. When in considerable quantity, it may form a fibrillated tissue by a linear arrangement of the granules into fibrillæ, these giving rise to white spots not unlike those produced by a local hypertrophy of the normal tissue. This I have seen in a few instances. This fibro-cellular tissue being thus changed, its passage-ways for the transmission of the tubes and vessels are quite altered, and misshapen tubes and compressed vessels are the results. The condition of the epithelial structures is like that of the first stage in character, but worse in degree. More granular matter and more free fat are generally found; and with these are sometimes found a bulged portion of a tube apparently completely clogged, its excretion being prevented by a constricted part below. There is one other appearance I have frequently noticed: this is the irregular and unequal form of the Malpighian bodies; some quite small, others very large—all due, in my opinion, to the irregular growth or action of the supporting tissue.*

The appearances presented in the third form are only an increase upon those we have just considered. The supporting tissue becomes more and more hypertrophied and condensed, and loses much of its former areolar character; low granular products are scattered through the organ, and the Malpighian bodies have a tough, bloodless aspect; all seeming to forbid any healthy or other action whatever of the organ. It certainly is a matter of some surprise that the blood transudes anything through such a structure. All these microscopical appearances which we have just traced belong, as must be seen, to inflammation and its results.

It now remains for us to trace how far such changes in the minute structure are compatible with the symptomatology and gross pathology of the disease.

The enlarged volume, the general turgescence of the vascular system of the organ, accord well enough with the microscopical appearances found. The albuminuria of this stage, however much of it may be referred indirectly to a general blood dyscrasia, is due, directly I think, to the vascular congestion, there being a serous transudation through the Malpighian tufts. That this is so appears to be shown from the fact that the Malpighian body is often found stained with the colouring matter of the blood, which not only indicates that there has been quite a congestion, but that the serum of the blood might pass in the same way. Some of the albumen found in the urine may come also from the abnormal albuminous effusion into the tubules; but it is mostly from direct transudation. This transudation I do not regard as due to mechanical relations alone, since, were it so, all congestion, whether inflammatory or not, should lead to the same results. This, however, is not true. There is an unnatural relation existing between the vessels and their contents, and this, aside from the dynamic causes, leads to an easy separation of the albumen from the blood.

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* These alterations in the fibro-cellular tissue are those which Henle, Eicholtz, and others have regarded as constituting the disease.

In the second stage, I conceive the albuminuria to be somewhat dependent upon other causes also; in fact, due to the results of the inflammation as much as to the inflammation itself.

The alterations of the fibro-cellular tissue which I have just pointed out lead to equally serious phenomena in the circulation. The Malpighian bodies and vessels generally are compressed, their action irregular, and with a pre-existing dyscrasia in the blood, an evil constantly fostering itself, it is easily conceived how they may strain the albumen from the blood. Add to this, constantly pressing blood from an inflammatory action on these compressed recipients, and you have, I think, a sufficient cause for the increased albuminuria of this stage.

In the third and last stage, these causes are still more active, and you find adequate reasons not only for the excessive amount of albumen, but for the very anæmic state of all the vascular tissues.

The atrophy and contractions of the second and third stages I conceive to belong purely to the sequelæ of inflammation, in exactly the same light as those of wounds and cicatrices.

During the more active inflammatory conditions of the disease, there is effused a considerable quantity of an adhesive plasma, which interstitially and otherwise forms attachments to various points. When the active stage of the inflammation subsides, and this ceases to be thrown out, an absorption of the hyaline portion takes place. From this, and from a concomitant condensation of the fibro-cellular tissue, I conceive the various contractions and puckerings so often seen to occur. What gives strength to my opinion in this matter is, that I have frequently examined the bridles of the contractions, and have found them to be an adventitious product.

The atrophy is dependent upon like causes, the increased amount and condensation of the supporting tissue at the expense of the vessels and tubes. This will appear a sufficient cause alone, when we consider for a moment the large proportion of space these last occupy in the healthy organ.

But I think there is another cause for the atrophy, and to which I have alluded in another place. I refer to *retrograde metamorphosis,* the nature of which change I need not here point out. It can well occur in an organ where the nutrition is so depraved; and a retrocession of some of the unnourished normal tissues back to their primitive granular type, and then a partial absorption of this last, afford an explanation not only of the obsolete character of some of the tissues found, but also of some of the diminution of size of the organ, and of the presence of free fat in the part.

I have selected from my note-book the following cases, illustrative of some of the points I have just treated. That they may be entitled to the name of cases, I have given them with all the general symptoms, yet in an abbreviated form, and with a curtailing of some of those details which, if written, are never read.

The cases occurred in the practice of the Massachusetts General Hospital, Boston, with which I was then connected as one of the house-officers. Owing to the completeness of the means this institution furnishes for medical inquiry, I have thought them the more worthy of regard.

Case I.—*Cardiac Disease of one year—Œdema of the Extremities for five months—Symptoms entirely Cardiac—Death at the end of the third week. Autopsy: General Dropsy—Disease of the Heart—An apparent, but no real Disease of the Kidneys.*—D. S., æt. sixty-four, entered the Massachusetts General Hospital May 4th, and gave the following report: One year since, without appreciable cause, began to have distress and severe palpitation in the cardiac region. This continued for seven months without any added symptom, when first noticed swelling of feet and ankles. This last, extending rapidly, was soon followed by that of the upper extremities. Has noticed no renal or urinary symptoms—and until the last two months has been able to be up and about; at the time of entrance he was quite feeble and unable to stand, and the œdema of each extremity was strongly marked. His countenance had that pale, lifeless aspect met with in cardiac and renal disease. Most of the symptoms seemed referable to the heart, where, upon percussion, there was a less than normal space of dulness; the impulse was preternaturally strong; the first sound muffled, and with an endocardial murmur. The second sound normal. The urine, upon examination (the urine of all the cases was the *urina sanguinis*, or that passed in the morning), had a specific gravity of 1.012, but was normal, chemically and microscopically.

The œdema increased, and symptoms of debility supervening, he died at the end of the third week from entrance. Previous to death, the urine was several times examined, but in every instance appeared normal.

Autopsy nine hours *post-mortem*:—

Brain.—Ventricles dilated with serum.

Lungs.—Compressed by considerable serum in both pleural cavities, and congested posteriorly.

Right upper lobe universally diseased, apparently like chronic pneumonia, being solid, grayish, non-friable, and with no pus or trace of tubercle. Tissue of lungs otherwise normal.

Pleuræ.—With old and strong adhesions over the whole of the upper right lobe.

Heart.—Pericardium with natural amount of serum. Weight of organ ℥xx. Left ventricle with walls red and firm, and having seven-eighths of an inch maximum thickness. Cavity not dilated. Columnæ carneæ not hypertrophied. Slight disease at the base of the aortal valves. Otherwise, organ normal. Some ætheromatous deposit in aorta, but no dilatation.

Alimentary canal normal.

Liver.—Not fatty, and apparently healthy.

Kidneys.—Each weighed ℥iij, *apparently* much diseased, being small and tough. Surface rough, and having a mottled aspect, being a white mixed with a rather light red. On incision, cortical portion quite thin, the tubular portion approaching near the surface. Colour, mottled as externally. The whole appeared quite like the representations of Bright's disease. On stripping off the investing capsule, small lymph-like portions came with it.

By microscopical examination, the tubules of the medullary and cortical portion appeared quite normal, not irregular or distorted. The same may be said of the Malpighian bodies. The epithelium had its usual healthy aspect, and there was no appearance of desquamation either local or general. No appearance of granular matter in the tubules or elsewhere in the organs, and no fat, free or combined.

The few white points on the surface of the exposed kidney, and also adhering to the capsule, were found to be little sacs filled with columnar epithelium; and their slight attachment to the investing tunic caused them to be torn from their beds, when the former was stripped off. No appearance of granular matter about the surface, and no distinct adhesions.

I have related this case, not because it illustrates disease, but because it aptly illustrates the opposite. I consider it a case well showing the value of microscopical aid in the pathology of this organ. The gross appearances were those of a chronic Bright's disease; whereas, the excreting structure of the organ appeared, microscopically, normal—and this last corresponds exactly with the symptoms during life. I do not pretend to explain the shrunken and unnatural size of the organs. Neither am I well acquainted with their condition in elderly people dying of any chronic disease. The mottled appearance both externally and internally was, it appears to me, due to the peculiar mode of the congestion of the organ at the patient's death; and such singular appearances, it is well known, are not uncommon.

Pathology makes quite as great an advancement by our discrimination of what is *not* disease, as of what *is* disease.

CASE II.—*Pulmonary Phthisis of many months—Symptoms entirely Pulmonary—Albuminuria, without other Renal Symptoms, the last month—Death. Autopsy: Disease of Lungs and Kidney.*—M. M., æt. 23, entered the Massachusetts General Hospital October 27. According to her history, she had had for several months the usual symptoms of advancing phthisis. At the time of her entrance, the tuberculous disease appeared confined to the left lung, at the summit of which were the physical signs of a cavity. The subsequent symptoms were wholly, directly or indirectly, pulmonary—and the disease pursued a steady, though not rapid march. From time to time I had analyzed her urine, and did not find it abnormal except in the excess of urates which usually occur during the febrile disturbance of phthisis.

On March 10th, the urine was carefully analyzed, yielding the usual results.

On March 13th, it was again analyzed, and the following is the record I then made: Of a turbid, amber colour, and with a cloudy, rolling sediment. Specific gravity 1.021, moderately acid. By ebullition and nitric acid it appears *albuminous*, so that the whole is quite troubled in aspect. By microscope, the usual appearance of coagulated albumen in urine.

On nearly every third day from this time until her death, the urine was examined. The specific gravity fell to 1.010, where it remained; the albumen rather increased, and at no one time was it found less or absent.

The disease advancing, on April 18th she died with the ordinary symptoms of phthisis, and I do not think that during the last week she complained of any local renal symptoms.

Autopsy 6 hours *post-mortem*.

Head not examined.

Lungs extensively tuberculosed throughout. On the left summit one large cavity, and small cavities elsewhere.

Liver rather large, weight 4 lbs. 3 oz. Edges smooth and rounded, aspect paler than natural. Incised, it had a doughy, soft feel. A thin slice under the microscope showed the epithelial cells to be crowded with oil, and very numerous fat-globules occupied the hepatic tissue.

Spleen, weight ℥xiij; otherwise not abnormal.

Alimentary canal presented nothing remarkable.

Kidneys of normal size and shape; weight of each ℥vss. Incised, they presented nothing remarkable; there was a natural proportion between the medullary and cortical portions. The investing tunic peeled off, leaving a smooth surface, which, however, appeared congested. I well remember that they were thrown aside, as presenting nothing remarkable, by one who is well qualified to judge of gross pathological appearances.

By microscopical examination, a thin rasorial section of both the medullary and cortical portions showed the tubes as normal in size and shape. But their epithelium had not its usual full appearance. Some of it had disappeared, being replaced by granular matter, which last, in fact, seemed scattered through the tubes, extending even to the Malpighian bodies; which, however, did not appear so much changed as the efferent tubes. In the cortical portion the appearances of inflammation were most prominent, disappearing as one approached the calyces. Although I examined with particular reference to the point, I found, both chemically and microscopically, no appearance whatever of free fat.

This case illustrates many points to which allusion has been made in the preceding pages. It shows, like the first, the value of microscopical aid in our studies of this kind; but, unlike it, it shows what *is* disease. I may add, had it not been for the aid thus furnished, it would have been passed by as one of those remarkable cases in which albuminuria exists with the other usual symptoms, without any apparent renal alteration, and about which Dr. Graves (*Medical Gazette,* 1838) has written. It has, therefore, more than ordinary importance, touching, as it does, that class of curious cases.

It shows also how renal inflammation, of a subacute character, may supervene upon another disease of an inflammatory type, and which, from its long standing, gives rise to a prominent dyscrasia of the blood. Here, also, the microscope showed that, although the liver was crowded with fat, no trace of it was found in the kidney.

CASE III.—*Cardiac Symptoms of six months—Excessive general Œdema and Pleural Effusion—Albuminuria, without other Renal Symptoms—Death. Autopsy: Disease of Heart and Kidneys.*—E. M., æt. 38, entered the Massachusetts General Hospital May 4. He then reported that, six months previous, he began for the first time to notice cardiac trouble, by palpitation and dyspnœa. These continuing to increase, one month since he relinquished all work. Œdema commenced two weeks since, and, aside from these, knows of no other symptoms.

At time of entrance, he was feeble, and scarcely able to stand—whole aspect that of one having great difficulty of respiration, which last was quick and short. Pulse regular, but full. Œdema of every extremity, but especially of legs. By physical examination no signs of pleural effusion, the pulmonary symptoms being referable entirely to the heart.

By percussion, an unusually large space of dulness over heart. Impulse about normal. First sound attended with a dry endocardial rustle at its close, which sound extends up line of aorta. Second sound abrupt, and attended with a slight murmur.

The urine examined was loaded with phosphates. Specific gravity 1.020. By the usual tests, there was an appreciable, though not large, quantity of albumen. The microscope showed considerable minute granular matter like that of inflammation, in the deposit.

The march of the disease was rapid. Symptoms of pleural effusion appeared; the œdema increased; and the dyspnœa becoming quite urgent, he died two weeks after entrance with the usual symptoms of asphyxia.

Autopsy eighteen hours *post-mortem.*

Head.—Brain and membranes normal, but ventricles dilated with serum.

Chest.—One quart of serum in each pleural cavity; lungs much compressed thereby, but tissue normal.

Heart.—Pericardium contained one pint of serum. Weight of organ 1 lb. 6 oz.; of a rounded shape, and apex flattened. Cavity of left ventricle dilated to three times its normal size, but its walls not thickened. Columnæ carneæ prominent. Aortic valves nearly natural. Right ventricle and both auricles with their cavities a little dilated, but their valves healthy.

Alimentary canal presented nothing remarkable.

Spleen.—Weight 13 oz., and full of blood; otherwise normal.

Liver.—Weight 3 lbs. 8 oz., of healthy aspect and not fatty.

Kidneys.—Weight of each 5 oz., presenting nothing peculiar externally. Incised, the ratio of the two portions normal; but the whole had a red, congested aspect. Scattered through the cortical portion were white masses, circumscribed, and varying in size from that of a millet seed to that of a small pea. Stripping off the investing tunic, it carried with it minute portions of the kidney, leaving the surface quite rough, and in which were imbedded several white masses like those seen in the interior.

On the whole, according to gross appearances, if we except the white masses and the adhering tunic, the general aspect would not differ, I think, from that of many simply strongly congested kidneys I have seen. And certainly it had none of that peculiarly mottled and granular aspect of ordinary Bright's kidney.

By microscopical examination, a thin rasorial section of the cortical portion showed the tubes of Ferrein and the corpora Malpighiana to contain granular matter and the so-called Gluge's inflammatory corpuscles, at the expense of the normal epithelium. Many of the epithelial cells were badly shaped or shrivelled. The tubes of the medullary portion seemed but little affected.

The white points spoken of were composed of a delicate fibrillated tissue, the fibrillæ being made up of the same granular matter arranged in a linear series; a view borne out by the fact that the tubes immediately surrounding these points had much more granular matter than the others. No fat in a free state was found.

In this case, there was nephritis of probably long duration, but having a slow progress. The fibro-cellular tissue does not appear to have been much affected, and therefore we did not find corresponding changes in the size and shape of the organ.

The white masses, situated as they were in the midst of a congested tissue, and so well circumscribed, might well have passed for crude gray tubercles, had they not been microscopically examined. I may add, there is every probability that here the cardiac disease existed first.

CASE IV.—*Œdema of Lower Extremities, with Renal Symptoms, nineteen months—Cardiac Symptoms, with Œdema of Upper Extremities and Face, eight months—Albuminuria—Death. Autopsy: Disease of Kidneys and Heart.* —M. J., æt. 17, entered the Massachusetts General Hospital February 26, and gave the following report of the history of her disease: Fifteen months since, while at usual work, noticed in morning a slight swelling of feet. For several months, this did not increase; but after that, could not wear her usual shoes. Eight months since, began to have some cardiac palpitation, with a dry cough and dyspnœa. Soon after this, œdema of upper extremities commenced, attended with much general languor and depression. At time of entrance was quite feeble; countenance had a pale, flabby aspect, but no œdema of it or upper extremities. No local renal symptoms, and no pain upon pressure over region of kidneys. Œdema of legs up to knees. No præcordial prominence, but an unusual large space of flatness on percussion. First sound attended with a well-marked bellows murmur, which is very rough under right clavicle, and is transmitted to back and up carotids. Second sound masked by a coarse murmur over aortal valves. Both sounds not diffused. The pulmonary signs were those of oppression at base of chest, where there was flatness on percussion, and some crepitus, as though from pulmonary œdema. Urine examined, had a specific gravity 1.020, acid, and copious precipitates of albumen by both heat and acids. By microscope, the usual albuminous casts of the uriniferous tubes.

From this time no new symptoms appeared—the progress of the disease consisting in an increase of those then existing. Such were the palpitation, cough, dyspnœa, and general œdema, the last of which was so excessive that the skin of the legs burst, and the eyes were closed.—Patient died on May 5th.

Autopsy twenty-four hours *post-mortem.*

Œdema.—Legs bursting with serum—

Left pleura contained . . .	one pint of serum.
Right pleura "	two pints of "
Pericardium "	℥iss " "
Peritoneum "	three pints of "

Lungs.—Much compressed by effusion, but tissue normal. Old pleural adhesions at both sides, but no recent lymph.

Heart.—Weight 8 oz., red and firm; both ventricles somewhat hypertrophied. Cavity of left somewhat enlarged. Mitral valve so contracted as scarcely to admit the tip of the little finger. The aortal valves similarly contracted, with a trace of vegetation on each. No ossification.

Alimentary canal presented nothing remarkable.

Liver and *spleen* normal; the former not fatty.

Kidneys.—Weight of each 3 oz.; rather small, and apparently quite diseased. Surface nearly regular. External tunic stripped off smoothly, and leaving no trace of redness except two or three defined spots. Incised, whole aspect rather pale. Cortical substance opaque, yellowish-white, or fawn-coloured; not properly mottled, but looking as though infiltrated with albuminous, granular matter. Medullary portion not of remarkable aspect; not flaring, or abnormally approaching the periphery. On comparing the whole appearances with some of those of Rayer's Plates, the case corresponded quite closely with that of Fig. 4, Pl. vi.

By microscopical examination, a rasorial section of the cortical portion showed the tubes of Ferrein and the Malpighian bodies much misshapen, often contracted and dilated, and many of them crowded with a fine granular matter existing in the place of the usual epithelium, the cells of which, when present, were similarly loaded with granules. The tubules of the medullary portion had a like appearance, though less marked. The fibro-cellular tissue was both hypertrophied and condensed—and was infiltrated with the same granular matter, though of a more albuminous nature. No appearance of free fat by the microscope; and the granular matter, treated with ether under the microscope, only very slightly disappeared.

A portion of the organ was sent to an excellent chemist for analysis; and he returned the following result: "The whole is mostly albuminous and fibrinous, with scarcely a trace of free fat."

I have thought this a fair example of chronic nephritis, going on to its last and worst form; and the kidneys presented, both grossly and microscopically, a good specimen of the appearances found in the third stage of Bright's disease, according to my own experience.

The presence of such quantities of inflammatory products, and the almost entire absence of fat, are well worthy of note. Unlike the last, it is probable that here the disease of the kidney existed first.

CASE V.—*Œdema and Ascites of nine years coming on after Child-birth—Diarrhœa of three months—Albuminuria—Death. Autopsy: Disease of Kidneys and Fatty Liver.*—R. S., æt. 42, entered the Massachusetts General Hospital, Sept. 4th, and gave the following history of her case. Nine years since, after birth of child, noticed, without other symptoms, an œdema of the feet. This gradually extended to abdomen, and even into chest, so that the pulmonary function was impeded.

Has noticed no renal or urinary symptoms, except variation in quantity of urine, which has always been in an inverse ratio to the amount of dropsy. Three months since, a simple diarrhœa coming on, the ascites almost entirely disappeared. Three weeks since, this diarrhœa became aggravated, reducing her to her present feeble condition.

At time of entrance, there was an oppressive ascites, and much œdema of the lower extremities.

The urine was albuminous to the ordinary tests. The diarrhœa did not seem at all amenable to treatment, and four days after entrance she died, apparently from debility.

Autopsy eight hours *post-mortem.*

External aspect.—Adipose tissue everywhere abundant, and one inch thick in parietes of abdomen.

Brain normal.

Lungs healthy, but little pleural effusion.

Heart normal, but mediastinum loaded with fat.

Alimentary canal had a tolerably healthy aspect, except the lower end of colon, where the mucous membrane was reddened and injected.

Liver.—Weight 5 lbs.; large, and having rounded edges, of a light fawn colour, and a doughy, flabby feel. Incised, its aspect was quite pale and lifeless. It greased the knife, and a section put under the microscope showed the acini crowded with fat globules, which rendered pale and almost replaced entirely their tissue.

The few hepatic cells seen were loaded in the same way.

Kidneys.—Weight of each 3 oz.; small, but of usual shape. Rather pale, but surface not rough. Incised, presented a pale, anæmic, tough aspect. The cortical portion had a decided granulated aspect, not really mottled. Tissue was rather firm. The tunic stripped off, carried with it minute portions of the organ, leaving the external surface with the same pale anæmic aspect as the internal.

In fact, the whole appearance of the organ was quite like that of the last case, and in comparing it with Rayer's plates, I fixed upon the same figure, as best illustrating its aspect.

By microscopical examination, a rasorial section of the cortical portion showed the tubes of Ferrein and the Malpighian bodies to be much misshapen, and their interior more or less occupied with granular matter, which was even more abundant than in the last case. But little healthy epithelium was seen. The fibro-cellular tissue was considerably changed, and infiltrated with granular and albuminous matter. No free fat visible, except here and there a small globule. Tried with the common tests of heat and ether, the organ yielded no perceptible amount of fat.

Both the gross and microscopical appearances met with in this case correspond, as will be seen, quite closely with those of the last, alongside of which I have introduced it, from the difference as to the general adipose condition of the two patients. In the former one, it will be remembered, the fatty tissue was quite absent; the liver contained but little free fat. In the latter, the opposite condition everywhere exists, the liver loaded with it. But in both the same condition of the kidney is found; a fact which certainly bears upon the fatty nature of Bright's disease, which Dr. Johnson has characterized as "precisely analogous to the fatty degeneration of the liver."

Were it not for burdening the article with details, other cases of similar character and importance might be introduced; but they would not, perhaps, illustrate any better than the preceding, the idea I have intended to convey as to the nature of this disease. In carefully recording cases of this disease, as they occur here and there, one is much surprised at the want of variety as to both gross and pathological appearances met with. In one well-marked, yet ordinary case, will be found nearly all that may subsequently be seen in the fifty that follow.

The following and concluding case I do not introduce as particularly illustrative of disease. It is one, however, possessing more than ordinary interest, for, in my opinion, the kidneys were found in just that condition we should expect to find them in chronic Bright's disease, according to the *new view* of the subject; whereas there do not appear to have been at all any symptoms of that affection. As a whole, it simply illustrates what I have remarked on a preceding page, viz: that there may be here, as well as in any other organ, a simple adipose accumulation with comparative impunity, so long as the fat does not occur in, or injure, the real functional tissue of the organ.

CASE VI.—*Cancroid Disease of Antrum—No Renal or other Symptoms—Partial removal of Disease—Supervening Pneumonia—Death in two weeks. Autopsy: Disease of Lungs and Fatty Kidneys.*—R. M., æt. 62, entered the Massachusetts General Hospital June 26th, and gave the following report:—

Has always enjoyed fine and robust health until five months since, when, following continued dull pain in right antrum, there appeared in that region a tumour. Aside from loss of sleep caused by pain, general health has not been disturbed. Has had no hepatic or renal symptoms; and, at time of entrance, appeared quite well, with the exception of local trouble.

Three days after entrance the tumour was partially removed, and proved to be one of those cancroidal affections starting from the epithelial tissue. One week after, a general febrile disturbance ensued, and there appeared both the rational and physical signs of inflammation of the left lung; under which, two weeks from entrance, the patient sank and died.

I regret that no opportunities presented for examining the urine for albumen during life. It was reported as not unnatural, and there were no symptoms to call one's attention to its chemical examination.

Autopsy fourteen hours *post-mortem.*

Head not examined.

Lungs.—The lower lobe of right lung presented all the appearances of pneumonia of the second stage. Right lung natural.

Heart normal. *Alimentary canal* healthy. *Spleen* healthy. *Liver* of natural size and appearance. Examined microscopically and otherwise, it appeared *unusually free from fat.*

Kidneys.—Weight of each 4½ oz., of natural shape and colour. Incised, tissue not at all congested, and of a light fawn colour, having the usual firmness; but there appeared to be a disproportion between the cortical and medullary portions of the organ—the former dipping down to near the pelvis, while the latter appeared buried in it. Stripping off the tunic, the surface was smooth, not pale or granulated. On the anterior surface, and at the lower extremity of the left kidney, was a cyst one-third of an inch in diameter, and apparently set in the tissue of the organ, being filled with a dirty, brown-coloured fluid. Both pelves contained quite an amount of free fat.

Specific gravity of kidney 1.042 (1.046 is, I think, its healthy specific gravity).

By microscopical examination, the contents of the cyst were found to be numerous epithelial cells and scales, of nearly all sizes and shapes, nucleated, but containing free oil, which also existed in considerable quantity out of them, all floating in a dull-brown liquid.

The external surface of the cyst rested in immediate contact with the renal tissue. Rasorial sections of the cortical and medullary substance showed the tubes somewhat enlarged and rather irregular, and many of their epithelial cells were distended with oil globules, which also were quite numerous in the free state. In some places, the amount of fat seemed to almost block up the passage of the tube, as shown by transverse sections. Fat globules, but *no fat cells,* were also seen in the matrix or fibro-cellular tissue. The Malpighian bodies appeared unchanged, and contained no fat, either free or combined.

A chemical analysis of the organ showed a very large per centage of fat.

The bladder had a normal aspect; but free fat existed on the surface of its mucous membrane, and its epithelial cells had much in their interior.

I will conclude by saying that, with this and the preceding cases, we have had an illustration of *fatty liver* with Bright's disease, and yet the kidneys almost free from fat; and also *fatty kidney without* Bright's disease, and the liver almost free from fat.

BOSTON, *July,* 1851.

Art. VII.—*Case of Molluscum developed by an Injury, and presenting, under the Microscope, the Characters of Medullary Cancer.* By Henry H. Smith, M. D., Assistant Lecturer on Demonstrative Surgery in the University of Pennsylvania. (With three wood-cuts.)

The following case is deemed worthy of record, as illustrative of the character and pathology of that rare form of tubercular disease designated by dermatologists as Molluscum.

Mrs. M., æt. about fifty-five years, born in Scotland, but long resident in the United States, the mother of eight children, the youngest of whom is over sixteen years of age, has enjoyed robust health during most of her life. She is possessed of much intelligence, is of an active disposition, though weighing one hundred and eighty pounds; has a soft, delicate, and vascular skin; considerably freckled; hair naturally sandy, now mixed with gray; eyes grayish-blue; cheeks rosy, and "has always had pure blood," seldom or ever suffering from boils or other eruptions.

In May, 1848, whilst in perfect health, she pinched the skin on the radial side of the forearm, about two inches above the wrist, in a cupboard, but paid little attention to it at the time. Six weeks afterwards, she noticed a thickening or welt in the line of the contusion, and, some time later, saw a little tumour like a wart or mole near the same point. This tumour gradually enlarged, and was soon followed by two others of the size of peas; "they were simple hard lumps, without redness or pain."

After several months, the tumours began to enlarge, but the skin was not changed; and after another interval the largest lump attained the size of a walnut.

Fearing that "it would turn to a cancer," she consulted me in March, 1849, ten months after the accident.

At this time there were six or eight spherical tumours, varying from the size of a pea to that of an egg, on the forearm near the wrist. The largest one was slightly lobulated, firm, and resisting, with the smaller tumours at its base; they were all movable, devoid of sensibility, and with the skin of the usual colour, and movable on them. An occasional stinging pain was, however, felt along a thickened band (believed to be lymphatics) which extended across the flexor muscles to within one inch and a half of the bend of the elbow, where it was gradually lost. Being uncertain as to the character of the complaint, she was simply directed to cover the tumour with kid spread with soap plaster, and to use the iodide of potash internally. After continuing this treatment, with the addition of iodine ointment, for near two months, no change was perceptible in the tumours, except that the largest one had become flattened at the top, and wider at the base, in consequence of the pressure of the bandage. The skin appeared natural, except that it was slightly creased, and adherent to the tumour in the creases. There was, as yet, no pain of consequence, the chief suffering being mental, the patient being depressed with the common idea of cancer. As she strongly objected to the use of the knife, chloride of zinc was freely applied, and the tumour sloughed out. The ulcer healed readily, the indurated chain softened during the suppuration, and the patient seemed to be cured. From this time until September, 1850, I did not see her, but was again consulted in reference to a new series of tumours near the elbow, at the point where the former indurated chain had ceased. On examining these, the same appearances were presented as had been noticed at the wrist; to wit, several spherical, firm tumours, of the size of peas and bullets, with one about the size of a walnut; skin unchanged, movable, and without signs of inflammation, but with occasional fits of pain; general health fair. Treated by iodine.

In another month, October, 1850, I again saw her in consequence of the tumours having been bruised by carrying a basket; the largest lump was now quite painful, and had rapidly increased in size. Fifteen or twenty new shot and bullet-like tumours had formed around it, and another indurated line could be traced in the course of the lymphatics on the inside of the arm nearly two inches above the elbow. Caustic was again applied to the largest tumour, and a large portion of it sloughed out. This ulcer, however, did not heal, but soon showed a malignant character, with thickened everted edges, ichorous discharge, and a constant disposition to slough, in addition to which, another small tumour appeared at the old cicatrix near the wrist.

The ulcer at the elbow, extending around two-thirds of the arm, soon opened the basilic vein, and gave rise to frequent hemorrhages, which were only controllable by lint for a few hours, when the bleeding was renewed. The general health now began to fail, the digestion became impaired, and the tumours appeared above the elbow, although the axilla continued *perfectly healthy*.

Hemorrhage returning from time to time, and it being impossible to check it, it was decided, in a consultation with Drs. Horner and J. M. Wallace, that, under the circumstances, the arm had better be amputated. Accordingly, I took it off (Dec. 15, 1850), before the medical class of the University, near the insertion of the deltoid muscle. Fig. 1 represents the appearance of the arm with the fungous ulcer immediately after the operation.

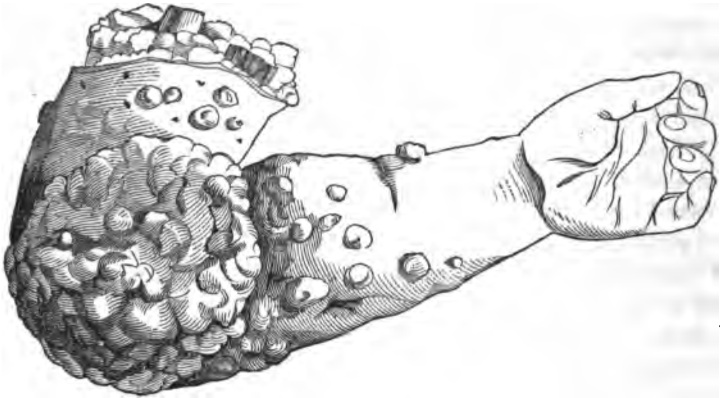
The stump was dressed with the cold water dressing, healed readily, and in four weeks the patient seemed quite as usual. In January, however, she complained of pain in the forehead over the right eye, and I found two new small tumours on the os frontis, just above the right frontal protuberance. These tumours soon became exquisitely painful, but otherwise resembled those formerly seen.

Under anodynes, tonics, and alteratives, including the preparations of Fowler and Donovan, her general health improved for a short time; though the violent neuralgic pain distressed her from time to time, and only yielded to an ointment of aconitina gr. j, cerate ʒj, applied to the part.

Under this treatment she partially resumed the business of her store, but complained of being excessively sensitive to cold.

Feb. 18*th.* I again saw Mrs. M.; the tumours had enlarged, and many others were apparent on the head and on other parts of the body, being the first time that the skin seemed to be generally contaminated. Of this there can be no doubt, as my previous examinations had been thorough. The tumours on the head were nearly immovable, but those on other parts, as the stump and body, presented the original characters, though more scattered; one or two on the shoulders were red, and resembled a mulberry wart; and some of them were also highly sensitive. Her appetite had now failed, her digestion was torpid, and her general health consequently impaired, giving signs of disease not to be mistaken.

Fig. 1.



March 25*th.* Great increase in the number of tumours; those on the head lobulated, and the largest one livid and vascular on the surface, resembling fungus hematodes previous to ulceration. All the tumours are subject to "burning and shooting pains." Ordered anodyne, &c. &c.

April 1*st.* Disease progressing; complains of pain and tenderness in right hypochondriac region.

21*st.* Sufferings very severe; no ulceration in tumours; debility increasing; dimness of vision in right eye (corresponding to largest tumour); partial deafness.

May 2*d.* From the rarity of the case, several professional friends visited her. No change in the treatment.

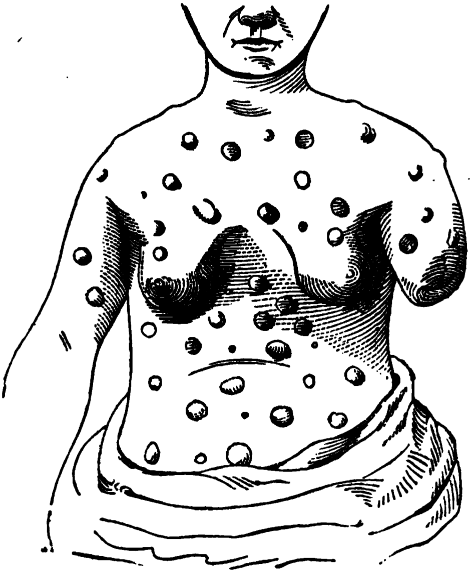
8*th.* Since last date unfavourable symptoms have increased; evident cerebral disorder; no vision in right eye—lid paralyzed; general tremors; unable to turn in bed; no power to retain food.

11*th.* Moribund, but yet sensitive to pressure on right hypochondriac region. Died at 6 P. M., May 11th, 1850, being more than two years since the original injury.

13*th*, 10 A. M. Being unable to obtain permission to open the body, I was obliged to be satisfied with an inspection, and with an examination of the largest tumour, as far as it could be done without opening the head. The body had been in ice thirty-six hours, and was about being prepared for the coffin, and her sons insisted on being present. All, therefore, that could be learned was as follows: The limbs and body presented the ordinary plumpness, there being comparatively little emaciation except about the chest and abdomen. Rigidity natural. Head presented ten tumours, most of which were anterior to the parietal protuberances, and varied in size from a musket-ball to an egg. The skin over the larger tumours was becoming vascularly discoloured, as noted before death. On incising the largest tumour, it cut with about the firmness of brain, being neither pulpy nor cartilaginous; appeared of the consistence of brain; had a pearly-white colour; showed no points of blood, and appeared entirely devoid of blood-vessels. It had been beneath the periosteum; the latter was thickened about the circumference of the tumour, but the periosteum and the bone at the centre of the tumour had been absorbed, so that the finger could be passed into the cavity of the cranium. The dura mater was not perforated. The eye of this side (right) was somewhat protruded, leading to a suspicion of pressure through the orbitar plate by some of the other tumours.

The skin on the neck, chiefly on its front, contained about eleven tumours of the size of a pistol-bullet, spherical, with defined base and skin unchanged. On the chest there were about thirty of the same consistence, varying in size, as shown in the cut (Fig. 2). On the abdomen, on the stump, in the

Fig. 2.



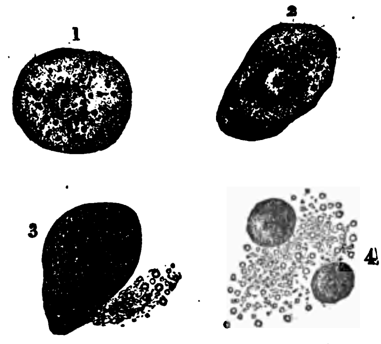
axilla, and above the clavicle of the amputated limb, were many more. The sound arm presented some, and the lower limbs had a few small tumours like peas. The back was thickly studded with them, some being purple, others unchanged, but the colour was deemed due to *post-mortem* changes. On the whole body there were at least one hundred and sixty or eighty tumours, entirely in the skin.

Having submitted a section of the largest tumour on the head to Dr. Jos. Leidy, I received from him the following note and drawing of the appearances which it presented under the microscope:—

Dear Doctor: The fragment of a tumour you requested me to examine exhibits beneath the microscope a structure consisting mainly of rounded or oval polyhedral cells, averaging the $\frac{1}{1600}$th of an inch in diameter. They are very delicate, so that slight pressure or the endosmosis of water is sufficient to burst them. Some have finely granular contents with a visible nucleus, but the greater part of them are more or less distended with coarse granules, resembling oil, completely concealing the cell-nucleus. It is this coarse, granular, oleoid matter which gives the opaque, white, cerebriform appearance to the tumour.

The cell-nuclei are usually single, globular, granular, about the $\frac{1}{3300}$th of an inch in diameter, and contain a minute central nucleus.

Fig. 3.



Structure of Medullary Cancer, highly magnified, taken from a section of the tumour on the head, 36 hours after death.—1. Globular cancer-cell, with visible nucleus, and a few fat granules. 2. Elliptical do. 3. Cancer-cell distended with fat granules. 4. Nuclei and granular matter from cancer-cells.

A quantity of the same kind of granular matter existing within the cells was observed exterior to and surrounding the latter; but this, I suspect, escaped from many of the cells which were ruptured by the violence to which they were subjected in the examination.

No portion of the fragment contained more than a mere trace of very fine filamentous tissue.

A portion of a tumour from the same patient as the above fragment, which I examined last winter, so far as I recollect, corresponded in its structure to the foregoing description.

It may probably interest you to know that I tried the experiment of inoculating cancer in frogs, by introducing a small piece of the above fragment of the tumour beneath the integument of the back of one of the latter animals. Several weeks subsequently, upon opening the skin of the frog, to learn the result of the experiment, I found the piece of cancer had formed a true vascular connection with the skin, and had itself become pervaded with a capillary rete more extensive than existed in it originally. For a more detailed account of this and similar experiments, I refer you to the last number of the *Proceedings Acad. Nat. Sciences.*

Yours, very truly,

JOS. LEIDY.

DR. HENRY H. SMITH.

Summary.—A patient, aged fifty-five years, previously in good health, pinches the skin of the arm; six weeks subsequently she notices a spherical tumour, with a broad base, firm and resisting, movable, and with the skin unchanged; no pain in the part; no other tumours elsewhere. Ten months after this, the principal tumour has attained the size of an egg, is lobulated, and with smaller tumours around its base; indurated lymphatics extend from it up the limb, but the skin remains natural. Caustic removes the tumour, and the ulcer heals. Six months subsequently the tumours re-appear near the elbow. Caustic applications remove a considerable part of the enlargement, but leave an unhealthy ulcer, accompanied by sloughing and frequent hemorrhage. New tumours form above the elbow, are removed, and then, the general health becoming impaired, the limb is amputated, nineteen months after the original exciting cause. Notwithstanding the absence of lymphatic disorder about the stump, the tumours re-appear in six weeks upon the head, then all over the body, excite violent neuralgia, and result in death about two years from the first appearance of the disease. General inspection and microscopic examination indicate the presence of albuminous matter, similar to that of medullary sarcoma.

Remarks.—The rare occurrence of Molluscum, and the want of accurate accounts of its pathology, have tended to render our knowledge of it somewhat indefinite.

The earliest case recorded, appears to have been that of John Reinhardt, reported by Professor Tilesius, at Muhlberg, in 1742, but to which he assigned no name, though he described minutely the characters of the complaint. The patient, who was in his fiftieth year, had his body at birth covered with small excrescences. When fifty years old, these excrescences varied in size from a pea to a pigeon's egg, were of various forms, some being like warts, others oval; the prevailing colour being red, with here and there one of a dull yellow or brownish hue. In the centre of the largest was seen a small opening, *from which small thickened vermiform matter can be expressed like "comedones."**

Bateman recalled attention to the disease thus described, designating it as molluscum, and defining it "as characterized by the appearance of tubercles of slow growth, little sensibility, and of various sizes, from that of a vetch to that of a pigeon's egg. He also described two varieties in one, which he deemed contagious; a *milky fluid* could be pressed out of an opening in the tumour, while in the other there was no discharge.*

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* Clinical Lecture on Molluscum, by Francis Hale Thompson, London Lancet, May, 1841. Du Molluscum; recherches critiques sur les formes, la nature, et le traitement, par Dr. Jacobovics, Pesth, 1840 (see Dr. Patterson's paper).

Alibert and Biett employed the name of Molluscum from "the resemblance of the tubercles to the eminences which grow on the bark of the maple tree."†

Rayer places the disease in question under the head of cancer mollusci-forme, and describes it as characterized by tubercles which are either flat or slightly rounded in the centre, indolent, of the same colour as the skin, and of a size varying from a five cent piece to that of five francs, the anatomical characters of which were a very considerable thickening of the corium, the tissue of which had *become hard and of the consistence of scirrhus.*"‡

Cazenave and Schedel follow Bateman in the description of the disease, adopting his two varieties, of molluscum non contagiosum and molluscum contagiosum. In a patient seen at St. Louis affected with prurigo senilis, they saw a number of small tumours spread over different parts of the body, the largest as big as a nut, the rest not larger than peas; they seemed to be *formed of dense fibrous substance and were not painful to the touch.*§ "Contagious molluscum is a very rare disease, and has not been met with in France."‖

Dr. Patterson¶ in an excellent paper on the contagious variety, presents drawings of the structure of the tumours, showing the tubes and other portions of a structure indicative, as he believes, of their being obstructed sebaceous follicles.

Dr. Henderson** has seen five cases corresponding with the description of Bateman. "Examining the structure of these tumours, he found them to consist of vertical cells opening towards the centre and discharging their contents into a common cavity, which communicated with the exterior by the excretory opening. The contained matter consisted of nucleated cells, about $\frac{1}{1800}$th of an inch in diameter."††

Dr. Washington L. Atlee‡‡ reports a case in a female in which the skin was covered with tumours varying in size from a pin's head up to that of a large nut, beneath the skin and firmly attached to muscular and tendinous tissue. The removal of one of the tumours on the thigh showed it to be the *fibro-cellular encysted* tumour of Dupuytren. The patient dying some months subsequently a *post-mortem* examination showed that there were three distinct classes of tumours. 1. The molluscum of Bateman. 2. The fibro-cellular encysted of Dupuytren, which crackled like scirrhus when cut into. 3. An encephaloid mass found in the abdomen.

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* Synopsis of Cutaneous Diseases.

† Dictionnaire de Médecine, t. xx. p. 136.

‡ Traité sur les Maladies de la Peau, t. ii. p. 260.

§ Cazenave and Schedel, edited by Dr. H. D. Bulkley, New York, p. 253.

‖ Loc. cit.

¶ Cases and observations on the Molluscum Contagiosum of Bateman, with an account of the minute structure of the Tumours, by Robert Patterson, M. D., Leith, Edinburgh Med. and Surg. Journal, vol. lvi. p. 279, with plates.

** Edin. Med. and Surg. Journ., vol. lvi.

†† Quoted from Wilson.

‡‡ Amer. Journ. Med. Sciences, vol. vii. N.S. p. 296.

Dr. J. H. Worthington* reports a case in which the tumours were from the size of a pin's head to that of a split pea; soft, elastic to the touch and covered with cuticle, which does not differ from that which is natural. The tumours seemed to contain a pulpy or semifluid matter, were devoid of sensibility, perfectly indolent, and with no signs of inflammation about them. The skin over a few was discoloured and livid, owing to a defect in the capillary circulation. They had existed many years and undergone but little alteration.

Dr. Erasmus Wilson† disbelieves the contagiousness of the variety of Bateman, and regards all the tumours as dependent simply on obstruction of the sebaceous follicles, finding them to present all the characters of a small conglomerate gland, and the matter being identical with that from the sebaceous follicles.

Mr. Frederick Hale Thompson‡ reports a case of molluscum affecting the entire skin, and accompanied with the development of a medullary tumour on the thigh. The tumours covering the skin were unconnected with anything, but were of the same albuminous character as that on the thigh. He therefore suggests the name of Albuminous Molluscum for this variety. In the lecture accompanying this case is a full analysis of the paper of Dr. Jacobovics.

This gentleman has done much towards simplifying the subject by proposing a division of the disease into three classes, according to the character of the structure of the tumours, to wit:—1. Tubercula fungosa. 2. Tubercula atheromatosa. 3. Tubercula variegata.

According to Dr. Jacobovics, Molluscum is "characterized by congenital tubercles, hereditary or acquired, more or less numerous, of variable volume from that of a pea to that of a small melon, sometimes round, sometimes oval, as often flattened, irregular, ordinarily sessile, rarely pedunculated. They may preserve the colour of the skin, but often present a red-brown, yellowish-brown or bluish-black colour; their surface may be smooth or mammillated, dry or humid, sometimes scabby, *as often firm as soft, solid or atheromatous*, &c. &c.

Of the seat of the disease he says—

1st. The funguous tubercles are seated in the dermial cellular tissue.

2d. That he cannot determine the seat of the atheromatous from the incompleteness of the evidence which we possess.

3d. That the chorium and epidermis participate in the lesion which seems previously to have affected the sebaceous follicle.

In reviewing the testimony thus collected, much of the apparent contrariety of the description of this disease appears to have been owing to the different varieties having all been referred to the description of the original case of Tilesius. Adopting the classification of Jacobovics and the well sustained views of Wilson, Molluscum may be defined as a disease creating a change in the sebaceous follicles of the skin, in which such cell changes can be noted as are seen in other tumours seated in this tissue. The Contagious Molluscum of Bateman, will include the cases of Patterson, Henderson, Biett and Worthington, and is probably nothing more than a disordered secretion and change of structure in the sebaceous crypts as stated by Wilson; while the cases of Rayer, of Hale Thompson, Atlee, and that at the head of this paper may be regarded as fibro-scirrhous and albuminous degeneration of the same structure. Such an arrangement of the disease will be found to harmonize all the cases heretofore reported. It is deserving of special notice, viz., that if as stated the disease is seated in the sebaceous tumours, it must be, as it has been, amenable to constitutional treatment, and is certainly not malignant and probably not contagious, though when it is attended with complications of the general system it may present the ordinary variety of fungus hæmatodes or medullary sarcoma, and has hence been well named as Albuminous Molluscum. There is, therefore, but little reason to doubt that an obstruction or a fibro-scirrhous or medullary degeneration of the sebaceous follicles, combined with a marked cachexia, may be regarded as the pathology of this complaint. In the case now reported, the injury to the sebaceous follicles of the skin on the arm, merely induced the medullary deposit and the development of the constitutional disease just related, in the same manner that a local injury will lead to the development of cancer in any other organ of the body. The fact, as stated by Dr. Leidy, of the growth of a portion of the tumour taken thirty-six hours after death, and after being thirty hours in ice and inserted into the skin of a frog, presents an instance of vascular action not often met with. The well known accuracy of the observer and character of the Association to which the frog was shown, leave no doubt of the correctness of the point stated.

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* Amer. Journ. Med. Sciences, vol. x. N. S. p. 284.

† Diseases of the Skin, Phila. edit., p. 340.

‡ London Lancet, May, 1841, p. 256.

PHILADELPHIA, *July*, 1851.

ART. VIII.—*On Nausea and Vomiting as a Symptom of Cardiac Polypus.*

By GEO. W. BASKIN, M. D., Member of the American Medical Association. (Read before the Mercer County Medical Society.)

AMONG the diseases which are difficult to diagnose with precision, are some of those which involve the heart and its appendages. True, there are certain phenomena present in those cases, which to the observant pathologist, unerringly point to the diseased organ; and, by the aid of percussion and auscultation, the practiced ear may and does determine, absolutely, the exact nature and location of most of the lesions affecting that viscus; but there are still some lesions of the heart, for the detection of which we have no certain diagnostic sign. In this last class we may confidently place *the formation and presence* *of a polypus or polypi within its cavity or cavities.* Writing on this subject, one of the latest and best of authors says, "their symptoms are uncertain." Another, no less distinguished, says the diagnosis "cannot be easy" but may be suspected from an aggravation of general symptoms; while a third adds a long enumeration of symptoms, that may possibly indicate it (but which are common to all diseases of the heart). "We confess that we have no other means of resolving this difficulty, than by a reference to the progress of the disease." Concurrent with the opinions thus quoted is the testimony of all our standard medical writers, and we are thus, for the detection of this disease, left without any guide, other than what is furnished by the consideration of a certain set of symptoms, which pertain alike to all diseases of the heart. There is then still room for inquiry on this subject, and it is proposed to submit briefly two cases of *Polypi of the Heart,* with such remarks as have suggested themselves, in the hope that they may assist in resolving the difficulty. Let me premise that by the term "Polypus of the heart" is meant those fibrinous concretions which occur some time previous to death, become semi-organized, and by their presence in the heart, occasion a decided disturbance of its functions, ultimately endangering the life or producing the death of the patient. There is another species of polypus—so called—formed by the coagulation, or a separation of the constituent parts of the blood, just before, or at the moment of dissolution—but to them we do not have any reference.

CASE I.—Mr. L. L., aged forty-five, was seen in the spring of 1846, labouring under a dropsical affection, the primary cause of which had not, at that time, been ascertained. His whole body was anasarcous and enormously swollen; large fluid accumulations distended the belly and filled the thorax, and there were also present unequivocal symptoms of effusion into the ventricles of the brain—with pressure more particularly about the root of the optic nerves. Under appropriate treatment—medicinal and operative—he was relieved of his dropsy, and he was then (it had been impossible to do it at an earlier period) carefully examined. His heart, which was enlarged and hypertrophied, with some trifling evidence of valvular obstruction, and his liver, which was much enlarged, were the only organs in which any lesion was discoverable, and their condition sufficiently accounted for all the symptoms that had been observed. His health in a short time had improved so much that further attendance on him became unnecessary, and the progress of the case for some months is unnoted.

In February, of the subsequent winter, I was again called to see him, and he was then suffering as much as at any time before, from a return of the more prominent symptoms. The reaccumulation of water in his belly and chest had been very gradual, but had become so great as seriously to interfere with his respiration, and the consequent necessity of a constantly upright position, together with sleeplessness and want of rest, had very much prostrated him. A marked feature, however, was an occasional, but increasingly frequent tendency to *nausea and vomiting*—a symptom that had been particularly observed by the patient himself, as different from any suffering he had previously had. Physical exploration revealed, more distinctly, the cardiac enlargement, and a decided obstruction to the closure of the aortic semilunar valves. He was again relieved for a short time, but about six weeks prior to his death, which occurred early in the following April, there was a great aggravation of all the symptoms, especially those dependent upon deranged function. The occasional nausea and vomiting soon became constant, and for some days before dying it was impossible to administer any nourishment, or drink, or anything whatever. That symptom was beyond the control of medicine, even for mitigation. He died suddenly, as if by syncope while sitting in his chair, and in a few hours afterwards, assisted by my father, an examination was made of his body. Circumstances prevented a very extended investigation, and our attention was therefore at once directed to those parts, which, during life, had afforded the most evidence of disease—the thoracic and abdominal viscera. Simply premising that, in addition to a general anasarca, there were found large quantities of fluid in both the large cavities, we will speak of the condition of their contained organs. On opening the thorax the *lungs* were seen bearing some traces of an old pneumonia, and there were some slight adhesions between the right lung and the costal pleura, but there was no evidence of any recent disease. The *pericardium* contained about twice as much fluid as ordinary, and, considering how general the effusions had been in other parts, it was a matter of surprise that so small an amount had occurred in that sac.

The *heart*, being separated and removed from the body, was found to be greatly enlarged, and its cavities, laid open, disclosed an excessive hypertrophy of the left ventricle. The weight of the viscus, apart from the right auricle, which had been carelessly severed, was twenty-one ounces. Within the left ventricle was found a *polypus*—a semi-organized mass of a yellowish-white colour, opaque, of a fibrinous structure, and of an oblong, irregular form, measuring nearly three inches in length, one in width, and three lines in thickness. It was attached to the ventricular walls by small shreds or fibres, through the columnæ carneæ, and thence, gradually lessening in size, it extended into the orifice of the aorta, there to be similarly connected with the free margins of the semilunar valves. The valves themselves, and every other part of the organ, except those already specified, were perfectly normal.

Around the *pyloric orifice of the stomach* there was a very slight scirrhous deposit, but not, by any means, sufficient to produce any functional disturbance, and apart from that, not the least mark of disease was perceptible.

The *liver* was slightly enlarged—not near so much as had been supposed—and on its surface was deposited, in irregular patches, a substance not unlike cartilage in colour, structure, and hardness.

Our investigations were carried no farther.

CASE II.—Miss P., aged about nineteen, and of medium size, had been in ill health for nearly a year. In the month of October last, she rather suddenly and rapidly grew worse. Two symptoms, more particularly noticed by the family from their unpleasant character and the distress they occasioned the patient, were an exceeding great dyspnœa, and nausea and vomiting. The former had been present, in some degree, during her entire sickness, but was much aggravated, and the latter had only manifested itself for the first time at the period when she grew worse. About a week after thus becoming worse, she was suddenly seized with convulsions, and, on that occasion, I first saw her, she having been under the care of another physician previously. The convulsions returned with much violence several times after I began attending upon her, and had they not been evidently dependent upon causes not likely to produce such, I would have pronounced them to be epileptic, so nearly did they assume the peculiarities of that disease. Prospectively, let me remark, that she was not again so affected until a few days previous to her death. As soon as possible, a careful examination of her case was instituted, and the suspicion, that an observance of her general symptoms awakened, of disease of the heart in some form was confirmed thereby. Auscultation over the cardiac region afforded a loud and distinct sawing sound, mingled with an indescribable murmur or noise, such as I had not before met with, or seen described. Greatly predominant, however, was the *sawing* sound, but owing to the complication just noticed, the exact location of the lesion producing it could not be determined. Percussion revealed an increased bulk of the heart, as also some effusion into the chest. The lower extremities were swollen and œdematous, as were the hands occasionally. Her pulse, varying in frequency, was hurried, small, and irregular. No disease of the lungs or abdominal viscera could be detected. These physical signs continued unchanged throughout the case, but in its progress, those dependent entirely upon functional derangement, were greatly aggravated. As in case No. 1, the nausea and vomiting became almost constant. It occurred under all circumstances and at all hours, frequently disturbing her repose, and at no time could it be traced to a certain cause. So persistent was this symptom as to induce frequent but fruitless searchings for some organic gastric lesion, and by it even the little relief that else might have been afforded her, she was deprived of. A remarkable hemorrhagic tendency was manifested by an almost constant dropping of blood from the nose, oozing from the cutaneous pores of the face, and, towards the close of life, by a sanguineous vaginal discharge, which, from the time of its occurrence and other circumstances, we were prevented from regarding as a true menstrual flux.

A fatal prognosis was, of course, promulged and a palliative treatment adopted.

A few days before she died, she was again seized with convulsions, followed by a deep coma in which she died, just six weeks from the time I first visited her.

Autopsy, thirty hours after death, in the presence of Drs. Grier, Hunt, and Harnet.

As in the preceding case, attention was specially directed to those organs in which, from symptoms present during life, we had reason to suspect we would find the seats of disease. Hence we first opened her chest, within which, on the left side was found some dropsical effusion, not, however, in sufficient quantity to produce any great degree of dyspnœa. The *lungs* were clear of any sign of disease, recent or remote.

The *heart* and its appendages were next removed from the body and carefully examined.

The pericardium was empty of its usual fluid. On the inner surface of the sac as well as on the outer surface of the heart were found rough granular patches of fibrinous deposits, varying in size, and evidently the result of an acute pericarditis. The *heart* was much enlarged and hypertrophied. With the means at hand we ascertained its weight to be at least seventeen ounces, but this is only an approximation to the true weight, and, it is possible that it may have been as much as a half ounce more. Certain it is, however, the organ had doubled its normal weight and dimensions. Neither in the appearance of its walls, nor within the cavities of the right side, was anything unusual noticed. The hypertrophy was found to be confined entirely to the walls of the left ventricle, whose cavity was much diminished in capacity. Within it was a mass of semi-organized fibrinous tissue, of almost cartilaginous hardness, opaque and of a yellowish-white colour. This concretion was nearly four inches in length, and at its largest part measuring about one inch in width and three or four lines in thickness. Thence tapering towards each end, the one extremity passed through the auricle and extended some way into the pulmonary vein, while the other extremity was attached to the cardiac walls near the apex. From the whole length of this body, small threads or fibres passed off to fasten themselves firmly to different points of the auricular and ventricular surfaces. The body of the polypus was firmly adherent to, and lying between the free margins of the mitral valves, and by its presence utterly preventing an accurate approximation or wide separation of them. The result of this condition of the parts was, that not only regurgitation of blood from ventricle to auricle was not prevented, but that the passage of blood from auricle to ventricle was impossible to a great extent; thus producing a fulness of the pulmonary vein and a consequent engorgement of the lungs. Hence would arise much of the dyspnœa that marked the case, and this fulness and engorgement of the circulatory system, propagated to the brain from the great centre, would account for the occurrence of convulsions at the period when the polypus is supposed to have formed.

The stomach presented not the least trace of disease (much to our surprise and contrary to all expectation), nor did any other of the abdominal viscera present anything unusual in their appearance.

Remarks.—The object of this paper is to inquire whether the sudden occurrence of nausea and vomiting, and its continuance in the progress of and concurrently with other undoubted symptoms of heart disease, can be considered as pathognomonic of the formation and presence of fibrinous concretions or polypi within the heart?

It is not proposed to evolve a theory from the phenomena of the two cases cited, but it is conceived that they, taken in connection with collateral reasons, would justify the belief that there is some truth in the idea broached in the inquiry.

One fact, worthy of note, is that no writer in the enumeration of the symptoms of any other morbid condition of the heart, mentions or alludes to the presence of nausea and vomiting; since, if observant practitioners and pathologists, with extensive opportunities of observing the course and phenomena of diseases of which they write, do not any of them notice a particular symptom, the inference is fair that it has not occurred, and never does occur, and hence in other cases, when present, would be deserving of special attention.

But there are two authors of eminence—though only two, that are known to me—who mention the occurrence of nausea and vomiting in connection with the presence of fibrinous concretions in the heart. In his book on that organ, Aran, in speaking of this special condition, says—after giving other general symptoms—that there "is nausea and continued vomitings, and in some cases, stupor and feeble convulsive movements." On the same disease Hope remarks, that "if there is a sudden aggravation of the symptoms common to disease of the heart," occasionally accompanied with nausea and vomiting, the presence of a fibrinous concretion may be suspected." So far as the authority of books will avail—however slight it may be—it certainly favours the idea that nausea and vomiting, conjoined with other symptoms of heart disease, is rather peculiar to the polypus of that organ.

My own experience and observation would tend to confirm the opinion. Very many cases of diseased heart—in my own as also in the practice of others—have fallen under my observation and examination. The diagnosis, in some of the cases, was confirmed by the opinion of the most eminent physicians in this country, and in an equal number by careful post-mortem examinations; but in only one besides the two given were the sickness and vomiting observed. In that one, disease of the aortic valves was thought clearly to have been made out, but no opportunity offered after death of confirming the truth of that opinion, nor of verifying the suspicion entertained, that there was present a fibrinous concretion. The absence of these symptoms, in my practice, holds good even for those cases of functional derangement of the heart, when we would most readily expect that, through the disordered nervous system, there would be some sympathetic derangement of the stomach and other important parts of the economy.

In the two cases given, it will be observed 1st, that, in both cases, there was a sudden aggravation of all the symptoms of heart disease some weeks prior to their death.

2d. That, simultaneously therewith, the patients were seized with nausea and vomiting—which continued unabated through life.

Knowing as we do, by actual observation, that there were polypi in these cases, we are ready to infer that their formation and presence was marked by the sudden and continued aggravation of all the general symptoms. And being also in the knowledge of the fact that there was not, in either case, any lesion of the stomach to produce the nausea and vomiting, may we not, with equal justice, infer that as these symptoms occurred simultaneously, and continued with the others, they resulted from the same cause? But we have also, in the one case, the occurrence of convulsions at a short period after the supposed formation of the polypi, their return before the death of the patient, and that death preceded for some days by coma—which symptoms Aran considers as rather indicative of the condition in question—to strengthen us in the inference, that the concretions were antecedent to the beginning of the nausea and vomiting.

We will not attempt to theorize upon the subject—to give the why or the wherefore of these things—but trust, that if there is any force in the proposition submitted, that it will be confirmed by the observations of others.

MERCER, *March* 1851.

ART. IX.—*Case of Stricture of the Œsophagus.* By ROBERT H. CUMMINS, M. D., Wheeling, Virginia.

THE subject of the disease was the child of Mr. James Blake, an interesting little girl between three and four years of age. On the last day of August, 1850, the mother had reduced to a liquid state, for a domestic purpose, a portion of common potash, such as is made from wood ashes, and is used in the manufacture of soap. The child, mistaking it for water, drank it; not much alarm was felt by the parents at the time, and they were satisfied with applying some domestic remedies. On the next day, however, I saw the child, and on examination, I found the whole mucous membrane of the mouth and pharynx in a state of disorganization. It presented a white appearance, and looked as if it could be easily detached from the subjacent tissues. The time had passed by when oleaginous or acid antidotes should be used, and my duty was simply to treat the effects of the caustic upon the tissues with which it came in contact. This was done by making oily applications to the mouth and throat, and the employment of mucilaginous drinks, and an occasional aperient. We likewise ordered a light and unirritating diet. I supposed that the alkali had not reached the stomach, from the absence of the usual symptoms which would indicate a lesion in this organ. After ten or twelve days the child recovered from the immediate effects of the poison, and in a short time appeared to have regained its usual condition of health.

After the lapse, however, of three or four weeks, the child was observed to have some difficulty in swallowing, and most of the solid food it took began to be eructated. The trouble grew worse from day to day, and the patient was perceptibly losing flesh and strength; the parents supposed that the vomiting resulted from disease in the stomach produced by the potash, and were not much concerned about it. It was not until the 15th of November, two and a half months after the accident, that they became alarmed and again consulted me. The child was then weak and considerably emaciated. It had a craving appetite, and frequently asked for food. Difficulty was now experienced in swallowing fluids, such as milk, soup, and water. Sometimes they would reach the stomach, but more frequently after a given quantity was swallowed it would be thrown up. Solid food would be taken eagerly, swallowed, and almost immediately eructated. At one period of the twenty-four hours, sometimes in the morning, sometimes at night, sometimes at noon, liquids could be swallowed, reach the stomach, and be retained. The child could always tell when this time had arrived, and then she usually took about one pint of milk. This was the principal nourishment that sustained her.

It was made known to the parents that a stricture of the œsophagus probably existed, and that all the difficulty their child experienced was produced by this cause, and not by disease of the stomach. An examination with a gum-elastic bougie revealed the truth of this opinion, and the obstruction was found to exist about six inches, measuring from the incisor teeth down the œsophagus.

The case was commenced to be treated in the usual manner by dilatation with gum-elastic bougies. Repeated attempts were made with these instruments to pass the stricture, but we could not succeed with even the smallest sizes. Imagining the flexibility of the instrument prevented its passage, we employed small sized gum-elastic catheters with a wire stilet. These were equally unavailing, and after a number of trials for two or three days, we became well convinced that nothing could be accomplished with any of these instruments.

During this period the child was rapidly sinking. She could only occasionally swallow fluids as thin as water, and these in quantities not sufficient to supply the necessary wants of the system. Injections of soup were freely employed, but notwithstanding our patient was dying from inanition.

Dr. Samuel Cooper, in his article in the *Surgical Dictionary*, describes a ball probe made of ivory, that he used successfully in the treatment of this disease. From reading his account, the idea was suggested to my mind, that a set of probes could be made from whalebone, that would probably answer our intentions. The flexibility of the gum instrument unfitted that for our purpose, and it seemed to us that the whalebone would have the requisite amount of stiffness. We accordingly had prepared from this material a set of ball probes of different sizes—the smallest about the dimensions of a No. 2 catheter. These were made progressively larger until they attained the size of the No. 9 instrument.

After repeated trials we succeeded in passing our smallest sized probe, and this was accomplished with no little difficulty. It required a great deal of careful manipulation. All the while our little patient was struggling and making violent efforts to vomit. At length the instrument unexpectedly passed with a jumping motion. There was no immediate improvement in swallowing, but in the course of an hour or two, the patient could swallow liquids much better than she had been able to do for some time previous. Next day we could pass the same instrument without much trouble. We tried a larger one, but did not succeed. Each succeeding day for three days we passed our No. 2 probe. After this we were able to pass our No. 3 instrument, and after each passage there was an improvement in the child's swallowing. She could by the seventh day swallow liquids at almost any period of the twenty-four hours.

There is a spasmodic element in this disease that interfered at particular times with our patient's deglutition, and no doubt always forms a great obstacle to the passage of instruments.

It would be unprofitable for us to narrate in detail all the circumstances attending the progress of this case. It will be sufficient for us to say, that we used successively our different sized instruments, until, about the 10th of December, we could pass our largest one, and that there was a progressive amendment in our patient's condition. She could swallow liquids at any time, and often took semifluid and even some kinds of solid food, such as soft baked gingerbread moistened with milk or water. She was rapidly regaining flesh and strength, and from a state of emaciation and extreme debility, she had by the early part of January, 1851, recovered considerable flesh and was able to run about the house. Her mind, heretofore entirely indifferent to everything, now showed a corresponding change, and she occupied herself with the usual amusements of childhood. At this period of our treatment we felt pretty sanguine of effecting a cure, and with the intention of still further dilating the stricture, we employed some large sized gum-elastic bougies. These, however, we never succeeded in passing beyond the stricture. They would reach the seat of the disease, and pass the distance of half an inch into it, but without using an unjustifiable amount of force we could urge them no farther.

This favourable state of things continued throughout the month of January. During the first days of February, deglutition was performed less easily, and sometimes our patient could not swallow at all. We were compelled to discard the use of all substances except those of a fluid consistence. The larger sized instruments I could not pass, and I was forced to use them successively smaller. Sometimes I was unable to pass even the smallest size, and when this was the case our patient could seldom swallow fluids of the thinnest consistence. The difficulty increased, and by the fourth of the month the passage seemed completely closed. I could neither pass an instrument nor could the child swallow a drop of water. Small portions would be taken, but almost immediately regurgitated. Soup injections were resorted to, but notwithstanding our patient was rapidly sinking. For five days we tried repeatedly, but in vain, to open the closed passage. Two or three times during this period, we supposed that some of the fluids attempted to be swallowed reached the stomach, but of this we were by no means certain. In our patient's condition, death was inevitable unless a passage could be obtained to the stomach, and every impulse of our heart constrained us to effect this by some means.

Three methods suggested themselves to our minds—first, to destroy the opposing stricture by caustic—secondly, to incise the stricture by means of a concealed cutting instrument—or thirdly, to force a passage with a stiff ball probe. After some consideration, however, we gave preference to the latter, as least likely to do mischief.

The whole case was fairly represented to the parents. On the one hand the danger of perforating the œsophagus was shown, and on the other death from starvation. They were not long in deciding. They not only sanctioned proceeding, but urged us to make the attempt.

We accordingly had a ball probe of small size and considerable stiffness prepared. This we introduced in the ordinary way, and employed not a greater amount of force than we were accustomed to use to dilate the stricture. After a few moments of steady pressure the instrument passed, and we supposed at the time had made its way through the stricture to the stomach, but it had ruptured the œsophagus. The stem of our other instruments was made very slim. They consequently had considerable flexibility, and this prevented our doing mischief with them. The child immediately swallowed wine and water, and continued to do so up to the time of its death, which happened on the 10th of February, about twenty-two hours subsequent to the rupture of the tube. No symptoms occurred previous to the death of the child that led us to suspect that the œsophagus had been perforated, and it was not known till revealed by the autopsic examination.

Permission was obtained to make a *post-mortem* examination of the diseased part only, and we were required to mutilate the body as little as possible. Externally the child presented an appearance of great emaciation. An entire consumption of the adipose tissue seemed to have taken place, and the outward indications all declared that death had occurred from inanition.

An incision was made over the sternum, and extended upward about one-third way on the neck, and downward into the epigastric region over the stomach. Our examination was hence confined to the thoracic contents, the stomach and œsophagus. In the thorax, outside of the œsophagus, we found no morbid appearances. The lungs themselves presented no trace of disease, but the right one was found in a collapsed state and completely surrounded by fluid. This consisted of wine, water, and soup, which the patient had drank for the last twenty hours, and probably amounted to one pint and a half. The fluid occupied the posterior mediastinum, and the space between the pleura costalis and pulmonalis of the right side. The heart was of normal size and appeared perfectly healthy. It contained blood in an uncoagulated state.

We next divided the œsophagus as far upward as we could reach without extending the cut upon the neck, dissected it out from its connections in the thorax, and, together with the stomach, removed it from the body. This tube was divided about two inches from its upper extremity, and we were thus prevented from examining the pharynx and that part of the œsophagus superior to the cut. After removing the œsophagus from the body, we laid it open in its entire length, and the ravages of the potash were at once presented to our sight. On its posterior aspect there was almost a continuous line, varying in breadth from the eighth of an inch to three-quarters of an inch, and reaching from the superior extremity to the stomach, that showed the track of the caustic. At some places the diseased action was extended more widely, and at one point, about two inches from the divided end, it had nearly embraced the whole circumference of the œsophagus. It was here that the caustic produced its most powerful effect, and made the greatest encroachment upon the calibre of the tube. At this point it was narrowed to the dimensions of a crow-quill, and there was not more than a quarter of an inch of the circumference of the passage that was free from disease. This was the situation of the stricture. It extended in length from one-half to three-quarters of an inch. The disease was on the posterior and left side of the tube, and the encroachment on its calibre was from this direction. Anteriorly and to the right a small space remained unaffected by disease. Immediately above the seat of the stricture, and on the left, a small pouch was formed by adhesion of the diseased tissues. This no doubt oftentimes formed a lodgment for our probes and prevented their passage to the stomach. At the seat of the stricture it was the unaffected portion of the tube that we found perforated. The opening would have admitted a No. 5 catheter. Below the stricture we found the tube on its posterior aspect diseased continuously nearly to the stomach.

The potash, wherever it came in contact with the mucous membrane of the stomach, appeared to have destroyed it, and the sub-mucous tissue at the affected parts was much thickened and fibrous in its character. The mucous membrane did not appear to be regenerated. The surface of the disease at least did not present the ordinary characters of a structure covered by mucous membrane, for it was roughened and fibrous. Wherever the caustic touched the mucous membrane was disorganized, and an inflammation was set up that resulted in a deposit of lymph which assumed a fibrous organization.

We next laid open the stomach. This we found of its ordinary size, and containing about half a pint of fluid of a dirty colour, and having flakes of mucus floating through it. The mucous membrane was somewhat injected with blood, and presented here and there traces of inflammation. We discovered no appearances in the stomach that led us to believe that the poison had reached this organ. There was no destruction of mucous membrane—no fibrous deposit. There were no ulcers either in the stomach or œsophagus.

Remarks.—Some reflections naturally occur to the mind in connection with this case, and, among the first, are those associated with its cause. Stricture of the œsophagus has been known to arise sometimes spontaneously and without any assignable cause, but, upon inquiry, we find that by far the greatest number of cases have been produced by the action of some caustic substance. Potash and the mineral acids are the caustics that have most frequently given rise to the disease. Of these, caustic potash has, perhaps, produced stricture most frequently. The first application of this substance to the parts in question causes the destruction of the mucous membrane. The second step in the progress of the disease is the establishment of inflammation in the submucous tissues. As a consequence of this, we have an effusion of lymph, which becomes organized and encroaches upon the calibre of the tube. The inflammation once established perpetuates itself; for successive deposits take place and become organized until the œsophagus is finally obliterated.

Nitrate of silver, though frequently applied with a curative intention to the pharynx and upper part of the œsophageal tube, so far as we are informed has never been known to produce the disease. Nor has it produced the disease, to our knowledge, in the urethra, or other similarly constituted passages. The kind of action set up by its application, we infer must be different from that produced by the other caustics enumerated.

The representations of this disease by diagrams in the books simplify it very much, and influenced by such teaching, the surgeon may often wonder why his instrument will not pass; but we are afraid these representations have no counterpart in nature. The post-mortem examination in our case, instead of revealing a regular narrowing, through which an instrument might easily be passed, showed diseased structure from the pharynx to the stomach, and, at one part, extending for the distance of half or three-quarters of an inch, an irregular narrowing of the tube by an encroachment from one side only. The entrance to this was difficult to find with an instrument, and when found, it was difficult to pass. The disease itself is, by no means, a common one, and we are led to believe that post-mortem examinations of it have been but seldom witnessed.

Our case was progressing favourably to a period within a few days before its fatal termination. We suppose that a new accession of inflammation, at this time, gave rise to an increased narrowing of the passage. This continued until we were finally unable to pass our smallest instrument.

Spasm, no doubt, of the affected parts, interfered to some extent with the transit of our instruments, but the examination proved that, at this time, it was mainly prevented by organic changes. It was before remarked, that spasmodic action constituted one element in this disease, and this, we think, will be readily admitted by any one who will reflect on the subject. In the early stages of the disease, our patient was able to swallow, at one period of the twenty-four hours, and not at another, and this was the case when we could not suppose that the passage was blocked up, either with solid food, or the secretions of the parts. We can only explain this symptom by supposing that spasm, at this time, was superadded to the other difficulty. The natural sensibility of the part is augmented, and the spasm is a reflex spinal act.

It was at the period above referred to, a few days antecedent to death, when our patient was entirely unable to swallow even liquids, and when she was in a dying condition, from absolute starvation, that we felt impelled to use some means for relief. Injections had been freely employed, but, notwithstanding, our patient was sinking. Four days had been spent in unavailing efforts to effect a passage to the stomach. In every aspect of the case, death seemed to be inevitable unless a passage could be procured. The circumstances not only justified us in transcending prescribed limits, but imperatively called upon us to act. We used force, and although we were not successful in our final attempt, yet we have the satisfaction of knowing that no effort was left undone, and that no justifiable expedient was left untried.

The examination after death furnished additional consolation, for it revealed a state of disease that was entirely incurable by art.

REVIEWS.

ART. X.—*A Practical Treatise on the Diseases and Injuries of the Urinary Bladder, the Prostate Gland, and the Urethra.* By S. D. GROSS, M. D., Professor of Surgery in the University of Louisville; Member of the American Medical Association; Author of "Elements of Pathological Anatomy," etc. etc.—With one hundred and six Illustrations. Philadelphia, Blanchard and Lea, 1851. 8vo. pp. 726.

THE object of this work, says its author, "is to present, in a systematic and connected form, a full and comprehensive account of the diseases and injuries" of the organs above specified. It is remarkable that no such work has hitherto been written in the English language—the more so since these affections are so often brought under the notice of the surgeon. The materials for such a treatise are abundant; they are to be found in the excellent, though incomplete, monographs of Brodie, Coulson, Parrish, in isolated papers by many other eminent surgeons of Great Britain and our own country, and in the numerous medical journals of both lands. Great attention has also been devoted to the affections incident to these important organs, by the surgeons of continental Europe. The task of combining and arranging into an harmonious and complete whole the mass of knowledge thus laboriously acquired and lavishly scattered abroad, could not have been committed to one more adequate to its successful accomplishment, than to the distinguished gentleman who has voluntarily assumed it. In addition to the ability and industry which would enable him to sift well the harvest of other reapers, to garner up the fine wheat and to reject the refuse, he has for years been himself an active labourer in a fertile field, and has largely added to the common heap. The result of his labours is this volume, replete with truths and principles of the utmost value in the investigation of these diseases.

The book is divided into three parts. The first part is devoted to the Diseases and Injuries of the *Bladder;* the second to those of the *Prostate Gland,* and the third to those of the *Urethra.* And in the *Introduction,* the anatomy of these organs is described in full; it contains also a chapter on the urine. Thus the author's treatise embraces a very wide range of subjects, not only those which are ordinarily comprised in systematic publications on surgery, but many others which are more rarely described.

We shall endeavour, by passing in review some of the most important of these topics, as herein discussed, to present our readers with a fair exposition of the merits and character of the work.

The first proper step towards a knowledge of the diseases and injuries of these organs, is the acquisition of their special and relational anatomy. To this important subject, Professor Gross has devoted much attention.

Medical students are too prone in their dissections to pass lightly over, or to neglect entirely, the disposition of the *fasciæ* of the various regions. Nowhere is an accurate acquaintance with the extent and arrangement of the fascial aponeurosis of more importance than in the perineum, both with reference to the lesions which occur accidentally, and to the operations which are practiced upon it. Our author, accordingly, dwells emphatically upon this anatomical element of the perineum, and upon its influence, so long as it remains entire, in preventing the urine, when poured out from a ruptured urethra, from coming in contact with the tissues around the anus and the thighs. He describes it as "a thin, delicate, fibrous lamella, of a triangular shape, which is spread over the muscles of the perineum, and is firmly attached on each side to the outer border of the branches of the pubic and ischiatic bones. In front, it is prolonged upwards into the scrotum, where it appears to become continuous with the dartos; behind, it winds around the posterior margin of the transverse muscle, and is finally inserted into the anterior layer of the triangular ligament of the urethra. This membrane consists of a single lamella, the fibres of which are for the most part disposed transversely; it is thin, transparent, and pierced at various points by the branches of the pudic vessels"—p. 35. And after giving this commonly received account, he adduces the observations of Dr. Buck, of New York, a report of which was submitted to the American Medical Association in 1848, and published in the first volume of the *Transactions* of that body. These observations are to the effect, that the superficial fascia of the perineum is continuous above with the suspensory ligament of the penis, furnishes a sheath for the corpus spongiosum urethræ, and one for each of the corpora cavernosa.

We would not be hypercritical, but we would urge that the author's description would have been more satisfactory, if, instead of speaking of this tissue as though it began and ended with the perineum, he had described it as really continuous with the superficial fascia of the abdomen. The fascia superficialis abdominis may be followed over the lower anterior face of the abdomen to the groins, where it is closely connected with Poupart's ligament, thus separating the superficial femoral from the superficial abdominal region, and preventing urinary infiltration which may have gained the latter from invading the former surface: at the median line of the abdomen, this same fascia approaching from each side forms the suspensory ligament of the penis; it likewise contributes an investing sac to each testicle and to the cord after it has escaped through the anterior ring; it constitutes also a subcutaneous investment for the scrotum, then passes downwards over the perineum, affording a sheath for each of its superficial muscles, excepting the external sphincter ani, and, winding around the transverse perineal muscles, becomes intimately blended with the posterior edge of the deep perineal fascia, or triangular ligament of the urethra; laterally, it is also firmly attached to the rami of the pubis and ischium. For a lucid account of this fascia, and for beautiful representations of it, we would refer the reader to *Maclise's Surgical Anatomy*, part 4th.

The vascular peculiarities of the perineum are well detailed, and many other circumstances which closely concern the operations upon this region.

We pass over the very full chapters on the anatomy of the bladder, remarking merely, that the author seems to have bestowed much, and careful study upon these organs, with especial reference to their interest in the operations to which they are exposed. The illustrations attached to this part of the work will be found to be very good, many of them having been originally executed for this volume.

The description of the urethra is equally full. There has been much difference of opinion among anatomists concerning the real nature of the external tunic of the urethra. Dr. Gross describes it as "a thin lamella of cellular tissue, which serves to connect the tube to the subjacent textures. It is of an erectile spongy character, and is pervaded by a great number of minute vessels, which impart to it a singularly striated aspect, not unlike fleshy fibres."

> "This reddish vascular appearance, added to the contractile power of the urethra, induced Mr. John Hunter, and afterwards Sir Everard Home, to believe that this tunic was essentially muscular in its nature. The opinion of the former rests wholly on assumptions deduced from pathological facts and reasonings; that of the latter is founded upon minute microscopical inspections. From these it would appear, that the external membrane of the urethra is made up of short longitudinal fibres variously interwoven with each other, and united together by a soft elastic substance. How far these results are worthy of confidence, is a point not easily determined. The question is still open, notwithstanding the numerous attempts that have been made to settle it. That the substance under consideration is really muscular is altogether improbable, though there are few practical surgeons who will deny its contractile power in certain states of the urethra"—p. 83.

This question may now, we think, be considered as settled by the observations of Kölliker, a very distinguished and accurate investigator, and one every way worthy of confidence. His researches into the structure of the spleen and mucous membranes, his recent treatise upon the special anatomy of the tissues, and his miscellaneous contributions to the medical periodicals of his own country, have made his name a prominent one. According to Kölliker, the outer coat of the urethra is composed of contractile fibre mixed with common elastic tissue, and is similar to the contractile tissue, which he has demonstrated as entering into the constitution of the spleen and mucous canals. The relative proportion of the contractile, to the common elastic element, varies in different portions of the urethra, being least abundant where the ordinary muscular tissue exists in quantity. He terms it the *simple muscular tissue.* The arrangement of this anatomical element varies according to situation. It is most complicated in the prostatic portion of the canal, and in the prostate gland. This tissue is so abundant in the latter body, that the true glandular structure forms only one-third, or one-fourth, of the whole mass. If the mucous membrane be raised from the prostatic portion of the urethra, a layer of *longitudinal* fibrous tissue of a yellowish colour comes into view—

> "Connected, internally to the sphincter vesicæ, by a thin and indistinct layer of fibres, with some of the longitudinal muscular fibres of the bladder; but by far the greater part of it is unconnected with this latter; it consists half of fibro-cellular tissue with many nucleus-fibres, and half of evident, smooth muscular fibres with characteristic nuclei. After this, and external to it, follows, secondly, a strong layer of yellowish *circular* fibres of muscular and elastic tissue. This layer is connected above with the sphincter vesicæ, where also it is most developed; whilst below, it becomes gradually thinner, and below the caput gallinaginis is either lost, or appears only in very small quantities. On removing the several muscular layers, we come at last to the proper glandular tissue of the prostate, of which individual lobes penetrate among the circular fibres just mentioned, their excretory ducts passing through the longitudinal fibres."

In the membranous part of the urethra this smooth muscular tissue is less developed; and here it is less requisite, because this part of the canal is surrounded by a distinct set of muscles. Under the mucous membrane, the cellular tissue of which abounds in elastic fibres, is a layer of longitudinal fibres connected with those of the prostatic portion.

> "These fibres consist for the most part of fibro-cellular tissue with nucleus-fibres, and include, in small numbers, undulating, delicate, and curved contract-

> ing fibre-cells (of the nature of smooth muscular fibres), which may be in part isolated, and are from 0.07 to 0.1 of a line long, from 1.002 to 0.003 of a line wide. They contain small nuclei from 0.012 to 0.014 long, and are more easily found in recent specimens than in those treated with acetic acid. External to these longitudinal fibres, there is a strong layer of transverse fibres, which belong mostly to the *musculus urethralis*. Some of these, however, especially those belonging to the inner layer, display some strong bundles of smooth muscular fibres, together with fibro-cellular tissue and nucleus-fibres, and a partial mixture of fasciculi of the transversely striated fibres of the *musculus urethralis*."

The smooth muscular fibres are still less developed, generally, in the spongy portion of the urethra.

> "At a certain depth, however, some longitudinal fibres are distinguishable, with a more or less considerable admixture of smooth muscle, which fibres cannot be regarded as beams of the corpus spongiosum, since they have no venous spaces between them, but rather form a continuous membrane which limits the corpus spongiosum towards the mucous membrane." (Quoted from the *Cyclop. of Anat. and Physiol.*, Art. *Urethra*, p. 1251.)

We abstain from any comments upon the chapters devoted to the consideration of the *urine*, and of *malformations*, *imperfections*, and *injuries* of the Bladder.

The third chapter discusses the subject of *inflammation* of the bladder. The *symptoms* of inflammation of this viscus are detailed as fully as they are ordinarily described in general systematic treatises—more so than in the usual text-books. But in such a work as the one which we are now reviewing, and from the pen of Professor Gross, we had anticipated much more than this. We had hoped that he would devote some considerable space to the description of anomalous cases, and such as are complicated with disease in other organs; in short, that, from his long clinical experience, the author would contribute an amount of information which the active practitioner might apply to the elucidation of the difficult and complex cases of cystitis which are so often presented to his notice. The *treatment* is much more fully dwelt upon. The professor very properly insists upon the importance of prompt and free venesection. He says—

> "There are few cases of acute cystitis which resist this means beyond the second or third day, and such as do are always more easily managed afterwards by mild treatment. I have repeatedly cut short, by the lancet alone, attacks of this disease so severe as to leave the patient no rest, and so threatening as to induce the worst apprehensions for his ultimate recovery. The same treatment has often promptly succeeded in my hands after other and less efficient means had been employed for days with little or no benefit"—p. 125.

This powerful remedial measure is not, however, to be indiscriminately employed, but with regard to the age and general condition of the patient and the duration of the attack. Neither does the author restrict its employment in the more severe forms of the malady which are accompanied with great constitutional reaction, but finds it equally applicable and advantageous in those which are attended with trifling general disturbance. In addition to this agent, the necessity of free evacuation of the bowels by cathartics and enemata is urged, avoiding such as are disposed to produce much irritation of the rectum. Diaphoretic medicines are also advised, particularly tartar emetic, Dover's powder, and an effervescing draught, according to the grade of the symptoms and the condition of the stomach. Diuretics are to be given cautiously; such as are very stimulating are to be avoided. The local means most highly recommended are topical bleeding, anodyne enemata, or suppositories, warm fomentations and the hip-bath. Judicious modifications of this general plan of treatment are suggested in cases of cystitis produced by the presence of foreign substances in the bladder, by cantharides, gout, &c. &c. With regard to "*direct medication*," the author is of opinion that "it is more likely to do harm than good. It is only in the latter stage of the disease, when the acute symptoms have disappeared, that such a course would be at all admissible, and then it could hardly be required." With these sentiments we are sure that all judicious men will concur.

The reader will find in the other sections of this chapter interesting descriptions of forms of disease which, although they are happily rare, do sometimes occur, involving great suffering on the part of the patient, and anxiety on the part of the physician. These are "fibrinous exudation of the bladder, suppuration and abscess, gangrene and ulceration." The author's account of these morbid processes and conditions is rendered more valuable in consequence of the recital of numerous illustrative clinical cases.

One of the most complete chapters in the volume is that on catarrh of the bladder. Dr. Gross denies the necessity of distinguishing two varieties of cystorrhœa, the acute and the chronic, inasmuch as the acute form "does not differ in any respect from ordinary acute cystitis, described in a preceding chapter." He therefore describes the affection as being chronic. The same view is taken of this subject by Dr. Wood in his excellent work on the Practice of Medicine, who treats of this disease as a *chronic cystitis*. Practically, this view may be sufficiently correct, the symptoms of cystorrhœa, whether in the acute or the chronic stage, demanding pretty much the same medication as those of ordinary cystitis of the corresponding grade. But pathologically considered, it seems to us that there is a difference between catarrhal inflammation and common inflammation of a mucous surface. The distinction may be best seen in the two affections of the conjunctiva; where, we think, the appearance of the vascularity, the alteration in the physical condition of the membrane, the character of its secretion as to aspect and the possession of contagious or non-contagious properties, are materially dissimilar from their commencement respectively. And if this be true of the conjunctiva, why not also of the mucous membrane of the bladder? In what especial particulars this difference consists we are not prepared to say. However this may be, the description of chronic vesical catarrh, as given by Dr. Gross, is very complete.

He says, "Cystorrhœa is always dependent, directly or indirectly, upon some obstacle to the evacuation of the urine, or upon a diseased condition of the bladder itself. Hence the most common exciting causes are stricture of the urethra, the presence of a calculus, hypertrophy and enlargement of the prostate gland. Paralysis of the bladder, whether produced by over-distension of the organ by urine, or by injury or disease of the spine, frequently gives rise to this state. The muscular fibres having lost their expulsive power, the water is never completely evacuated at any one time, even when the catheter is used, but a portion remains in the bottom of the bladder, where it is speedily decomposed, and acts as an irritant to the lining membrane, followed by an inordinate secretion of mucus. Cystorrhœa is a constant attendant upon sacculation, ulceration, hypertrophy, and carcinoma of the bladder. When the affection is once established, it may easily be aggravated or re-induced by exposure to cold, exercise on horseback, sounding, venereal excesses, drastic purgatives, indulgence in ardent spirits, stimulating food, irritating injections, diuretic and other remedies, as turpentine and cantharides, over-distension of the bladder, neuralgia, retrocession of gout, repulsion of cutaneous eruptions, local injury and disease of the adjoining parts, as the anus, rectum, vagina, and uterus."

The progress of the disease is then described, and its symptoms are detailed in a very satisfactory manner. The following quotation possesses some interest:—

> "Patients affected with cystorrhœa are sometimes impotent, even if they are comparatively young. I have met with several instances of this kind. In one remarkable case, the gentleman, forty-four years of age, had experienced no sexual desire for upwards of six years, though he was naturally of an amorous disposition. His penis had become soft and flabby, and had not been in a state of complete erection for a long time. He had occasional emissions, but they were always unaccompanied by the proper feeling. Owing to the frequent micturition which forms so striking a feature of this disease, and the severe straining which usually attends it, catarrh of the bladder is often complicated with hemorrhoids, prolapsion of the bowel, swelling of the testes, and even with hernia."

The *diagnosis*, remarks the author, involves the distinguishing of this complaint from seminal emission, gonorrhœa, and suppuration of the bladder; and this cannot be a very difficult task.

Passing over the observations upon the prognosis and the anatomical appearances, we are brought to those concerning the *treatment* of cystorrhœa. The cause of the disease having been ascertained, and if possible removed, the medication which the author advises consists in the local or general abstraction of blood, mild purgation, and the employment of certain internal remedies which act upon the kidneys and modify the character of their secretion. Of the latter substances, the author most approves of the balsam of copaiva in the dose of from ten to twenty drops repeated three or four times daily. Besides this, the turpentines are advantageous, as also the infusions of buchu, uva ursi, epigœa repens, the muriated tincture of iron, colchicum, benzoic acid, &c. &c. Among the direct applications are enumerated tepid water, introduced by a double-chambered catheter which will permit the fluid to enter the bladder through one side and to escape by the other, and various astringent and sedative solutions. With regard to cauterization by means of the solid nitrate of silver, the author has made trial of it in a few instances, but does not think it effected any decided impression upon the disease. He thinks it chiefly applicable to those cases which are dependent on inflammation of the neck of the bladder, accompanied with an unusual degree of sensibility.

> "In obstinate and intractable cases of cystorrhœa, where all other remedies have failed to afford relief, it has been proposed to penetrate the neck of the bladder by means of an incision similar to that made in the lateral operation of lithotomy. The object is to afford a free outlet to the mucous secretion as fast as it takes place, and to put the organ thereby in a state of comparative repose. In a word, the principle is the same as in the operation for anal fissure and fistula. The wound is not permitted to close too soon, and yet care is taken lest it become fistulous."

A case is then detailed in which this operation, originally suggested by Mr. Guthrie, but first performed by Dr. Parker, of New York, was executed by the latter. After much previous and protracted suffering on the part of the patient, and a variety of medical treatment,

> "Dr. Parker was induced to perform the lateral operation on the 23d of November. The incision was quite free, and was followed by the loss of about sixteen ounces of blood. For the first twelve hours the patient experienced severe pain in the bladder, urethra, and left thigh, but this gradually yielded to the liberal use of anodynes. A very decided improvement of the former symptoms soon became apparent; the pulse diminished in frequency; the urine passed off freely by the wound; the patient slept better, and for a time he

seemed in a fair way of recovery. About the end of the third week, however, he became worse; his strength now rapidly declined; the vesical distress increased, and he began to exhibit all the evidences of a poisoned state of the system from the retention or absorption of urea. He continued in this manner until the 24th December, when he expired, death having been preceded by delirium and coma."

Besides the diseased condition of the bladder, the kidneys were found affected, one enlarged and congested, the other small and filled with tubercular matter; both lungs also contained tubercles; in the left was a cavity. This case was, consequently, an unfavourable one for the operation; but Dr. Gross says—

> "I shall certainly not hesitate to resort to it the first favourable opportunity that may present itself to my notice. The operation, it seems to me, is particularly applicable to that form of cystorrhœa in which there is marked hypertrophy of the prostate gland and the muscular coat of the bladder."

We confess that we are not a little surprised to meet with such decided commendation of this expedient from Professor Gross. We find him teaching, at page 425, when speaking of *lithotomy*, that

> "No surgeon, having a proper regard for his own character and the dignity of his profession, would be likely to operate in case the patient is affected with organic disease of the lungs, or of any other important viscera. Serious lesion of the *kidneys*, *ureters*, *bladder*, and *prostate gland* also forbids interference. In short, wherever the health is much impaired by previous suffering, not solely dependent upon the presence of the urinary concretion, the judicious surgeon will hesitate not a little before he will resort to the knife."

Again, in his enumeration of the morbid appearances found after death from cystorrhœa, he says, p. 169 :—

> "After some time" (and we presume that this limitation must certainly apply to the 'obstinate and intractable cases of cystorrhœa, where all other remedies have failed to afford relief,' p. 177, for which the author considers the operation in question recommendable, and '*the credit*' of doing which he awards to Dr. Parker), "the muscular fibres become hypertrophied. The cellulo-fibrous lamella is also much thickened, as well as increased in density, and the mucous membrane, particularly that portion which corresponds with the bas-fond of the organ, is often thrown into large heavy ridges. In some instances the lining membrane is ulcerated, covered with patches of lymph, or protruded across the muscular fibres in the form of one or more pouches. The walls of the bladder are frequently five or six times the natural thickness. The kidneys, ureters, and prostate gland are generally implicated in the mischief, sometimes to a fatal extent."

Now, as it is not the mere presence of the stone in the bladder, but rather the diseased condition of this and other associated organs, which constitutes the objection to lithotomy, why should it be considered any the less improper to open the bladder in a case of cystorrhœa, in which the organ is not fretted and inflamed by the continued irritation of the calculus, and by the removal of which, in the other case, one important element in the morbid condition of the parts would be withdrawn?

We cannot reconcile these conflicting statements, neither can we at all unite with Professor Gross in commending this operation under any circumstances. Cases of moderate severity and duration will not require, and those of long continuance and unusual aggravation will, in the vast majority of cases, and of necessity, die from this "*ultima ratio.*"

The next subjects treated of are the "*bar-like ridge of the neck of the bladder,*" a peculiar form of local hypertrophy of this organ, first particularly described by Mr. Guthrie; and *sacculation of the bladder*, like the other a consequence of any long-continued obstruction to the discharge of the urine.

The *fifth* chapter discusses the nervous affections of the bladder, comprising *irritability*, *neuralgia*, and *paralysis* of the viscus. These are all exceedingly interesting affections, requiring for their successful and rational treatment considerable diagnostic skill and therapeutic knowledge. The author seems to have had frequent opportunities of studying these diseases, and his views concerning them will well reward a careful study.

In the succeeding chapter, he describes the *heterologous formations of the bladder*, scirrhus, encephaloid, colloid and melanosis, and tubercular disease. After this follow chapters on polypous, fungous, erectile, and other morbid growths of the bladder; on worms; serous cysts and hydatids; fœtal remains; hair, and air in this organ. Another treats of hemorrhage of the bladder. The chapter on *retention of urine* is very well written. The remarks upon the diagnosis of this condition are worth a careful perusal.

> "One would suppose that retention of urine could seldom, if ever, be mistaken, when we consider its mode of origin, progress, and symptoms, which are usually sufficiently characteristic. Yet, strange as it may appear, some very singular as well as very unfortunate blunders have been committed, in this respect, and that, too, by men who, from their skill and experience, ought to have known better. The affection with which it is most liable to be confounded is ascites, or dropsy of the peritoneal cavity."

And in the sequel some apposite cases are quoted. Retention of urine has been confounded, too, with a "supra-pubic abscess." And, inasmuch as pregnancy has often been mistaken for ascites, and by very distinguished physicians, and the error has even proceeded so far as actually to lead the surgeon to tap the swollen part, we should suppose that retention of urine may be just as well confounded with this condition of the uterus, or *vice versâ*. The points to be attended to in the diagnosis are sufficiently detailed by Dr. Gross to enable any one of ordinary discrimination, and particularly if he be upon his guard, to avoid so egregious and discreditable an error. The *treatment* of course consists in emptying the distended viscus by the aid, if possible, of the catheter. The author advises, very properly, that a portion only of the fluid be removed at once, if the quantity be at all considerable, in order that the bladder may have time to recover its tone, and that the pressure to which the abdominal and thoracic organs have been so long subjected shall not be too suddenly removed. He enumerates the most common causes upon which retention of urine depends, and by the cure or withdrawal of which a permanent recovery may be gained. The first class of causes affects the urethra, the bladder, or the head of the penis. To the first mentioned seat of the obstruction belong organic stricture, a calculus, clotted blood, coagulating lymph, inspissated mucus, or an enlarged mucous follicle, and, in the female, the mal-direction of the urethra; moreover, the obstacle may be exterior to the canal, as a simple or malignant tumour, an abscess, a collection of blood, a boil, or an ordinary swelling from contusion, any one of which may produce temporary obliteration of the channel, by the mere pressure which it exerts at some point. To the second appertains hypertrophy of the prostate, or the presence of some earthy or animal concretion, or any tumour within the pelvis of sufficient size to press upon the neck of the bladder. In the last category are included an imperforate prepuce, priapism, &c. These and other causes of retention, and the treatment, are ably expounded.

The other two sections of the same chapter are very appropriately taken up with observations upon the two expedients most commonly resorted to for the purpose of overcoming the difficulty with which we have just now been occupied; these are catheterism and puncture of the bladder. The first of these occupies a brief space in the author's volume. We cordially concur with him in his view of the importance of this apparently simple operation, and the very great skill which is requisite to perform it well. We should have been better pleased to be favoured with a much more extended consideration of the subject from one whose ideas concerning it are so correct, so far as he has expressed them, and whose practical skill in manipulating with the catheter, is, we have no doubt, so great. The directions which he gives, however, seem to us to apply only to the ordinary cases in which a surgeon is called upon to empty the bladder, and to leave untouched the only really troublesome instances which occur to him; the only ones with reference to which he would think it worth while to consult those whose ingenuity and tact are superior to his own. We know that, no matter how many additional pages Professor Gross had devoted to this point, no matter how lucid and comprehensive his lessons, the reader could not from all have acquired the delicacy and the dexterity which alone can enable him to accomplish his purpose in employing the catheter. Still it would have been satisfactory to him, no doubt, to find in this treatise that the whole ground had been thoroughly gone over.

Puncture of the bladder for the purpose of emptying it of its contents is very rarely requisite. Professor Gross says of it:—

> "It is only in cases of excessive enlargement of the prostate gland, attended with great tenderness and swelling of surrounding parts; in laceration of the urethra, and infiltration of urine into the scrotum; and in deep-seated, impassable stricture that the operation should even be seriously thought of. All other forms of retention will, there is reason to believe, yield to the catheter, aided by time and by soothing measures."

Dessault performed the operation but once during the eight years of his chief surgeonship of the Hôtel Dieu. Mr. Liston had resorted to it only once, so late as 1846. Sir Benjamin Brodie says:—

> "Surgeons who see a great number of cases of retention of urine may, in the course of their lives, be called on to perform it in a *few* instances. Those who perform it frequently must often perform it unnecessarily; at least, this is what I should say, judging from my own experience."

Professor Gross has never performed it, though he gives the accounts of two cases, in which he was upon the point of executing it, when the patient in each instance was relieved in an easier and safer manner—one spontaneously, the other by the catheter. The merits and the way of accomplishing the three principal modes of opening the bladder, viz., through the rectum, perineum, and the supra-pubic region, are narrated in the text. From a review of M. Mondière's table of ninety-two cases of puncture of the bladder, the professor infers that

> "The recto-vesical operation is less fatal than either of the others; but that it is more liable to be followed by fistula, infiltration, and abscess. As respects mortality, the perineal and supra-pubic punctures are about on a par. The proportion of fatal cases to the number of recoveries is remarkably small." (Vid. *Am. Journal Med. Sci.*, vol. iii. 495.)

The 15th, 16th, and 17th chapters are devoted respectively to the subjects of *incontinence of urine*, *hernia of the bladder*, and *urinary deposits*. These are succinctly, but comprehensively, treated of.

We have now reached in our cursory review of this interesting volume, the all-important topic of *stone in the bladder*, to which the preceding chapter has very advantageously cleared the way. To this subject, the author has devoted more than 170 pages. The chapter is subdivided into sections, each of which discusses some special point in the pathology of calculus: first, its nature and causes; second, its physical and chemical properties; third, its situation; fourth, its occurrence among the inferior animals; fifth, its symptoms; sixth, its physical signs, sounding and diagnosis; seventh, its pathological effects; eighth, its treatment, embracing a description of all the operations practiced for its removal from the bladder. The entire subject has evidently been very carefully studied, and the reader will find here presented to him a very complete exposition of the matter. We do not think that any thing is said which can with propriety be objected to, while the essay, for such it really is, abounds with important truths. We shall make an extract from the text, here and there, as we turn over the leaves, instead of attempting any formal commentary upon so familiar a subject.

In speaking of the nature and causes of stone in the bladder, he says:—

> "Coloured persons appear to be remarkably exempt from calculous complaints. Whether this is the case in all countries where the negro resides, I am not informed; but it is certain that the circumstance obtains, in an eminent degree, in the black population of the southwest. During a residence of ten years in Kentucky, I do not recollect to have met with a solitary example of gravel or stone in a coloured person. My impression is that Dr. Dudley, in his large calculous practice, has never cut more than two or three individuals of this description. To what this immunity is due, our knowledge does not enable us to determine. The circumstance is so much the more surprising, when it is remembered that the coloured people of that region are constantly exposed to hard labour, and that their fare is often of the coarsest character."

This is a very interesting fact, and it may be owing to the very circumstances mentioned, viz. :—

> "That the coloured people *are* constantly exposed to hard labour, and that their fare *is* often of the coarsest character."

Probably their fare is never luxurious, or but in very exceptional cases; and this, together with the constant, though by no means exhausting labour (for we believe it is almost universally conceded that the slave very rarely works so hard, or accomplishes so much in the same space of time, as the white labourer), to which this class of our population is subjected, are precisely the conditions which are the most likely to protect one from calculous complaints, and to counteract the calculous diathesis.

The relative frequency of calculus in children and adults seems to be a subject of doubt.

> "Of 5,376 cases mentioned by Civiale, in his treatise on calculous affections, 2,416 were children, 2,167 adults, and 793 old persons." But among 1,151 children admitted into the Foundling Hospital, London, during 27 years, only *three* cases of stone occurred; in the Military Asylum, at Chelsea, in 6,000 inmates not one case; in the Hôpital des Enfans, Paris, where 3,000 children are annually received, during the seven years from 1835 to 1842, the average number of cases *has been under four;* at the St. Marylebone Workhouse, where there have been on an average during many years between 400 and 500 children, there *has not been a single case* of stone during the last twenty years. The returns from different countries show a great difference in this respect.—(*Brit. and For. Med. Rev.*, vol. xiv. p. 165.)

Of	356	operations reported by	Dupuytren,	only	97	occurred in children under 15.
"	1,629	" "	Saucerotte,	"	1,195	" " "
"	478	at Norwich, "	Marcet,	"	227	" " "
"	666	" Naples, "	Renzi,	"	315	" " "
"	643	" " "	"	"	321	" " "
"	469	" St. Petersburgh,	.	.	357	" " "
"	175	" Austria,	. .	.	55	" " "
"	239	" Bavaria,	. .	.	116	" " "
"	106	" Bohemia,	. .	.	28	" " "
"	145	" Denmark,	. .	.	14	" " "
"	42	" Egypt,	. .	.	1	" " "
"	2,822	" France,	. .	.	1,347	" " "
"	1,058	" Lombardy,	. .	.	796	" " "
"	49	" Rome,	. .	.	10	" " "
"	140	" Sardinia,	. .	.	97	" " "
"	127	" Ulm, .	. .	.	64	" " "
	9,144	. . .	. .	.	5,040	

The following observations are very appropriate:—

"How far the constant use of hot bread, biscuit, and pastry, which are consumed in such enormous quantities in this country, especially in the South-western States, conduces to bring about calculous disorders, we have no means of deciding. That the daily employment of these articles is prejudicial, no one can doubt. Their influence in producing dyspepsia, so common in every part of the Union, is familiar to every observer, and need not, therefore, be discussed in this place. Hot bread in its various forms, frequently only half baked, and generally but half masticated before it is swallowed, is sufficient, if used for any length of time, to wear out the strongest stomach, and to break down the most vigorous frame. What the effects of such a state of the system must be upon the urinary secretion, every pathologist knows. A weakened digestion, with a sour and flatulent state of the stomach, constipation of the bowels, and an irritable condition of the brain, cannot by any possibility produce a healthy blood, any more than a morbid state of the blood can produce a healthy urine."

This is all true, as every one will admit; and one might write a very amusing, or a very serious, commentary upon it, as the spirit prompted at the moment. It is melancholy to see how these vicious practices have in this country seized upon all classes and all ages. People seem determined to continue in error, in some one of these respects at least. Where "the raw material" is of the best description, it is almost always spoiled in the preparation for consumption; and when this is not the case, it is sure to be, as Professor Gross says, "but half masticated before it is swallowed." The last habit is forced upon the young by domestic regulation, and when these grow up to manhood, it is still retained from the fancied pressure of business, or from the more inane force of custom. We have repeatedly been called upon to administer an emetic to children in one of our largest and best regulated public institutions, where dinner *must* be despatched in a given limited time, for the purpose of relieving their stomachs from the *large masses* of unchewed meat and potatoes, which had produced convulsions. And every one whose views of social enjoyment and the process of nutrition are at all what they should be, must often have seen with amaze and regret how rapidly dinner disappears from the tables of private families and of our best city hotels; where gentlemen and ladies devour their food as greedily and impetuously as famished beasts their prey, their faces wearing the same expression of anxiety and thought as when they are considering some weighty matter of business, or some important domestic responsibility, entirely forgetful or ignorant that, for sanitary as well as social benefits—

"Rien ne doit déranger l'honnête homme qui dine."

The physical and chemical properties of calculi, and the various circumstances attending and modifying their situation in the bladder, are narrated at considerable length; and many interesting notices are introduced of their existence in the bladders of inferior animals, of birds, fishes, and reptiles. We need make no comment upon these sections of the volume, nor upon the detailed account of the symptoms of stone. We must call especial attention, however, to the author's remarks upon the physical diagnosis of this affection, as we think them very excellent. He directs how and with what kind of an instrument the "*sounding*" of the bladder should be performed; enumerates the dangers attending or resulting from this operation, if badly done, or executed under unfavourable circumstances; describes the phenomena elicited by the instrument, and their variations under different conditions; he also details the many sources of error in sounding, and explains how these errors may be occasioned; and finally shows how a calculus may really be present in the bladder, and yet give rise neither to characteristic physical phenomena upon sounding, nor to rational symptoms.

The *pathological effects*, or, to speak more correctly, we conceive, the *anatomical* lesions, produced by the existence of a stone, are next pointed out, and then follows the section upon the *treatment.*

This subject naturally occupies a large part of the author's attention. He has spared no effort to make this portion of his treatise complete, and it affords us great pleasure to express our satisfaction at the result of his labour. We are presented with an ample account of the regimen to be pursued, and of the medications which have been found most serviceable; of the plan of dissolving the calculus by means of injections into the bladder, and by the agency of electricity; of the method of removal of entire calculi through the urethra; of lithotripsy, the modes by which this proceeding is accomplished, the conditions favourable to it, and those which preclude it, the dangers attending it, and the accidents produced by it. We will stop for a moment in our enumeration of the prominent topics discussed, to quote a few lines. Professor Gross says, at page 418:—

> "I can perceive no reason for administering chloroform in this operation, except in the case of children. On the contrary, I think it ought generally to be avoided. For, independently of the fact that the operation is usually unattended with much pain, it is a matter, I conceive, of no little importance that the patient's mind should be perfectly clear, in order that he may promptly inform the surgeon of his suffering, should any arise, whether from too rough a manipulation, too great a size of the stone, or the seizure and inclusion of the mucous membrane of the bladder. Such contingencies may, it is true, be remote; but it is well enough to be aware of them, and to guard against their occurrence. In children, on the contrary, who are unable to give any satisfactory intimation of their real feelings, anæsthesia is of great advantage. They are saved from suffering, and being rendered perfectly quiet and tractable, the surgeon may deliberately proceed with his manipulations, satisfying himself by a thorough examination of every part of the bladder."

We are glad to find that the opinion which we expressed on this question in our remarks upon Mr. Skey's *Operative Surgery*, in the preceding number of this Journal, are so authoritatively confirmed. We are not prepared to admit, however, that even in the case of children, who are about to undergo the operation, anæsthesia is expedient; for we conceive that it is just as important to avoid injuring a child's bladder as an adult's, and therefore equally unwise for the surgeon to deprive himself of the warning which the child's sensitiveness to injury may furnish him; but in the preparatory sounding of either adults or children, if the operation be painful, or excite much alarm or agitation, we see no objection to resorting to this calmative agent, but would rather recommend it.

The operations of *lithotomy* are next described, and the circumstances relating to this procedure are exhibited, as in the case of lithotripsy, viz., the instruments which are most serviceable, the mode of operating, the incision of the prostate, the accidents which are liable to complicate the operation, and the means of counteracting or preventing them. The author prefers the lateral operation, and gives an exceedingly interesting series of his own experiences with it, twenty-four in all, which were all successful. He generally employs the scalpel, rather than the gorget; though sometimes he uses an instrument resembling the beaked-knife of Sir William Blizard. The merits of the three instruments are the subject of a few comments. But while the author prefers the lateral operation, he canvasses very fairly the claims of the other methods of cutting into the bladder—the bilateral of Le Dran, the quadrilateral of Vidal de Cassis, the recto-vesical of Sanson, and the suprapubic or the high operation. The operation of *lithectasy* is likewise adverted to—viz., making an opening into the urethra through the perineum, smaller than in ordinary lithotomy, and slowly dilating the neck of the bladder until the aperture is sufficiently capacious to admit of the passage of the foreign body. We have also an account of the operation "*en deux temps*," as it is called, one portion of the procedure having been accomplished, but the whole not executed until after the lapse of some time, the patient having recovered from the effects of the first stage, or some obstacle which existed to the completion of the undertaking having been removed. The subject of stone in the bladder is concluded by some observations concerning the complaint in the female and the methods of relieving her. In fine, we do heartily assure our readers that they will find this whole matter most admirably treated of by Dr. Gross.

The first part of the book is completed by some sensible comments upon foreign bodies in the bladder.

The second part is allotted to the consideration of injuries and diseases of the *prostate gland*. We pass over the chapter upon *wounds* of this body, and that referring to *inflammation* of the same, together with certain conditions of this organ, which usually originate in prostatitis—abscess and ulceration.

Hypertrophy of the prostate is considered in the third chapter. The author dissents from the opinion of Home and others, that the left lobe of the gland is more frequently involved than the right:—

> "The opinion is not borne out by the results of dissection, and no reason, anatomical, physiological, or pathological, can be assigned for the occurrence, supposing it to exist."

This is probably the truth. Rokitansky says:—

> "The lateral lobes are the chief seat of the enlargement, which affects both uniformly, or predominates on one side."

The details of the modifications in form, dimensions, and internal structure which this exaggeration of the nutritive process impresses upon the gland are ample, and are well illustrated by many original drawings from nature. Two varieties are described: one in which the body is rendered preternaturally hard, so that the tissue tears with difficulty, and opposes considerable resistance to the scalpel; the other, more soft and vascular, and usually larger. In both, when the gland is cut or torn, numerous granulations are seen scattered over the surface, more abundant in the soft than in the hard variety, and containing a milky fluid also more copious in the former than in the latter. The intimate nature of hypertrophy of the prostate does not seem to have been sufficiently investigated. Rokitansky's account is very unsatisfactory. He says:—

"The substance of the gland in these cases appears normal, occasionally a little softened, of a spongy elastic consistency, and succulent, *i. e.*, its ducts contain much secretion; in other cases it appears tough and coriaceous, without visible alteration of structure. The formation of fibrous tumours is often complicated with this benignant variety of enlargement."—*Path. Anat.* vol. ii. p. 257, Syd. ed.

C. Hanfield Jones, in a paper on the prostate gland, published in the *London Medical Gazette*, vol. v. p. 328, describes the terminal follicles of this body as being

"Each, for the most part, invested and separated from the adjacent ones by a quantity of connecting tissue disposed in fasciculi, which are closely woven together, and include spaces which are occupied by the glandular structure; it consists principally of the white fibrous tissue, but also contains numerous bands resembling closely those of organic muscle."

And he thinks that in senile hypertrophy of the organ, this fibrous tissue becomes especially increased, thereby producing the granulated appearance seen on cutting into the gland, and the knobbed condition of the surface which sometimes exists. Professor Gross adopts this opinion. It is probable, however, that in many cases there is a real development of true glandular structure, lobes, lobules, and acini, as well as of parenchymatous tissue; but we should presume, without having any positive data to predicate the opinion upon, that such a development is more frequent in that variety of prostatic hypertrophy which occurs before old age, from irritation and increased vascularity of the organ, and not in advanced life, when the growth of the higher grades of tissue is much less active, and when those of inferior anatomical and physiological importance predominate. This view is rendered more probable, too, by the difference in colour of the gland in senile hypertrophy, as compared with that which is observed earlier in life; in the former it is of a grayish or drab tint, in the latter the red predominates, showing a greater degree of vascularity in the last.

The author's remarks concerning the causes of this affection, the periods of life in which it is met with, its progress and symptoms, are valuable, and, we believe, very correct, though different in many respects from the currently received views. And his observations on the diagnosis of the disease, and the morbid connections which it establishes with other organs, are equally commendable. He pretends to no peculiar success in the *treatment* of this troublesome and painful malady—of the senile variety, at least—but makes the reader aware of all that can be done, and how to accomplish it.

The remaining pages of this part of the book are taken up with sufficiently extended notices of the less common affections of the prostate.

The third and last portion of the volume is devoted to the *diseases and injuries of the urethra*. It is not necessary for us to follow the author through the whole of this chapter. For, from what we have seen of the book, we can assure our readers that he has not slurred over any important topic, but has given a fair consideration to all. We shall, therefore, examine only a very few of the chapters which remain. We may remark that we do not see why he should have omitted all consideration of *inflammation of the urethra*. This is a disease which would be benefited by particular study, for certainly there is none in the whole category of acute inflammations which is more troublesome and perplexing in its treatment.

The investigation of the pathology and treatment of *stricture of the urethra* is the object of the third chapter of this part of Professor Gross's valuable work. He divides strictures into the *spasmodic* and the *organic;* but limits his observations to the latter. We do not see any reason why spasmodic stricture should have been neglected in such a treatise as this, rather than neuralgia of the urethra and of the bladder, to each of which a chapter has been allotted. It is surely a very distressing and troublesome affection, one which requires proper treatment, and which is very much benefited by wise measures, as well with reference to its permanent prevention as for its present relief. And we think its due consideration is of the greater consequence, inasmuch as it can scarcely fail, if its visitations are frequent and protracted, to induce a permanent thickening of the mucous membrane of the urethra by the considerable nervous and vascular excitement which these paroxysms occasion. Moreover, the analogy between the lining membrane of the urethra and other mucous membranes, as well as accurate observation of the affection in question, render it almost certain that a frequent cause of the spasmodic stricture is a greater or less degree of evanescent vascularity of the tissue, which may become, by a very easy transition, a permanent condition.

Organic stricture may, according to the text, be either simple or complicated, common or traumatic, partial or complete, soft or callous, dilatable or undilatable, permeable or impermeable, recent or old. As to its *seat,* the author admits that "no part of the urethra, except, perhaps, the prostatic, is entirely exempt from organic stricture." But this exception is not a positive one, although it is undoubtedly true that the prostatic portion of the canal is very rarely affected. Ricord, however, has seen this portion of the urethra narrowed, independently of the prostate, and a similar case is cited by Mr. Crosse, of England, p. 616. The most common point of coarctation is variously stated by different authorities, as Dr. Gross remarks. He says from his own experience, he infers that

> "The affection is most common, first, in that portion of the canal which is comprised between the scrotum and the head of the penis; secondly, at the membranous part of the tube, or at the junction of this with the bulbous part; and, lastly, at the anterior extremity, within a few lines of the meatus. I have never seen a stricture at the prostatic portion of the canal, and therefore conclude that it must be exceedingly rare here, if indeed it ever exists"—p. 616.

With reference to the *number, form, consistence, colour, and symptoms* of organic strictures, we see nothing in the text which need detain us.

In conducting the *physical exploration* of the urethra, to establish a correct diagnosis, the author prefers the use of a common silver catheter, of moderate size and a little conical at the extremity, and where greater accuracy is requisite a wax bougie; he also is disposed to think favourably of the gutta percha bougie, suggested by Dr. Bigelow, of Boston, which should be introduced sufficiently warm to receive and retain the impression of the stricture into which it is passed. He does not attach much value to examinations made in this manner for the purpose of ascertaining the form and dimensions of the obstruction. Whatever may be the instrument employed for the exploration, the necessary caution is strongly inculcated.

> "All examinations of this kind should be conducted with the greatest gentleness and deliberation. All rough and hasty proceedings are calculated to do harm, by exciting spasm and irritation, and should, therefore, be carefully avoided. By slow and cautious manipulations, the point of an instrument may often be insinuated into the tightest stricture, or into one so tender and irritable as to resent every attempt of an opposite description"—p. 625.

The effects of continued stricture of the urethra upon this canal itself and other organs, adjoining or remote, are described in several pages. The only objection which we find against this portion of the author's narrative, and we venture to urge the same criticism against his exposition of the *symptoms* of stricture, is that it is somewhat deficient in force of expression. We believe that his statements are strictly correct, and that he exhibits a very full view of the subject; but we think that the truth will bear a much warmer tinting. The colours are all here, but they are not so artistically arranged and combined as they might have been. There is as much difference, in this respect, between our author's picture and that which Brodie has drawn of the same disease, as between a thunder storm as ordinarily depicted, and one which roars and flashes from the canvass of Turner or Vernet.

The *causes* of stricture are stated to be either traumatic or inflammatory, most frequently the latter; and among these, gonorrhœa is alluded to. The author does not believe that the *injections* which are made use of in the treatment of this variety of inflammation should be held answerable, as a general rule, for the production of the coarctation; he very properly, we think, ascribes this condition to *the disease,* and not to the means used for its cure.

In his account of the *treatment* of this affection, Professor Gross describes, as the most important methods, those by dilatation, compression, cauterization, incision, and external division; and exhibits what he considers are the conditions of the stricture to which each plan is most applicable. He lays down certain preparatory measures as necessary to be enforced prior to the commencement of any direct mechanical interference. He says, very justly,

> "Too much stress cannot be placed upon this preliminary treatment; indeed, I should consider it highly culpable to reject it under any circumstances. When the way has been thus paved, the particular kind of treatment is to be determined by careful consideration of the nature of the obstruction. There are few points in surgery which require more judgment and experience than this"—p. 633.

After alluding to, and rejecting as improper and insufficient, that plan which proposes to cure stricture by "constitutional means, especially rigid abstinence carried almost to starvation, and the daily use of nauseating doses of tartarized antimony, or the frequent exhibition of emetics, conjoined with rest in the recumbent posture, and the avoidance of all sources of bodily excitement," he discusses the method of *dilatation.* This plan, he admits, "is more frequently applicable than any other that has yet been devised." He describes the instruments various in material, dimensions, and shape, which are, or have been, employed, and expresses his own preference as follows:—

> "My conviction, founded upon ample experience, is that the very best instrument for dilating a stricture is the common silver catheter, with a slightly conical point. I have employed this instrument in the treatment of this affection for upwards of twenty years, and nothing could induce me to abandon it."

Its recommendations are stated to be its lightness, firmness, durability, and the fact that it is often requisite not only to pass through the stricture, but also to leave a hollow instrument in the bladder. Whether or not *all* these arguments are really valid can only be ascertained satisfactorily by personal trial. We have been inclined to think, in the few instances in which we have tried the silver catheter, that it is too light, and not sufficiently firm for the purpose; but far superior, in most cases, to the gum, linen, ivory, or whalebone bougies; the first two are too yielding, and the last too brittle to be relied upon. We would not, however, advance our own opinion on this point as in opposition to the author's, whose experience with the catheter has been infinitely greater than our own. Our preference is for the solid steel or silver instrument, and we think that the point should be rounded rather than conical. There are two methods, Professor Gross mentions, by which the process of dilatation may be accomplished: one by a rapid procedure, "a small or middle-sized" instrument being made to traverse the stricture, as gently and tenderly as may be, and allowed to remain in the bladder for twenty-four or forty-eight hours, or withdrawn through the stricture and immediately followed by one or more of gradually increasing size; the other by a more slow and patient process, in which an instrument is first introduced which will readily pass the obstruction, and after two or three days another of larger diameter, and so on at intervals, until a large instrument can be easily passed, when it may be used every day, at first, and gradually less and less often. By this proceeding also the catheter may occasionally be left in the bladder. The first plan is more rapid in its effects, and is the one which the author adopts; it is liable, however, to be followed by inflammation of the urethra, prostate gland, and neck of the bladder, although he has never known it to assume a serious character. The second method is more slow, but generally succeeds in the cases to which it is applicable, is less painful, and not liable to produce any injury. Dr. Gross says, p. 639—

> "The process of dilatation, or, as it might with great propriety be termed, the treatment by compression, is mainly applicable to soft and recent stricture. To those of an opposite character it is utterly unsuited, and should always give place to incision, either from within or without. I have no patience with dilatation for the removal of a hard, tough, narrow, and almost impermeable obstruction; such a case cannot be managed successfully by such a procedure; the most prolonged use of the instrument can do no good, and is only calculated to deceive the patient and bring surgery into discredit."

And in speaking of *compression* as applied to the anterior face of the stricture, he expresses strongly his want of confidence in it, entertaining, indeed, "a feeling against it almost amounting to aversion." Now we think that, in view of the success which Brodie and other distinguished surgeons have met with in the treatment of this affection by dilatation, and in view also of the acknowledged dangers and unfortunate results which have attended the employment of the other chief curative means, cauterization and incision, this decided declaration of our author is rather hasty and exclusive; and it is calculated to do harm by inducing those who have not his own skill in the use of instruments more dangerous than the dilator, to give up a safe, and, if patiently pursued, successful practice, for one which in their hands will probably do much more harm than good. It is, perhaps, the author's disinclination to, and comparative want of trust in, this plan of treatment, which has made him somewhat less careful and minute in his directions for conducting it. He lays small stress upon the dangers attending the employment of dilating instruments, such as the formation of false passages, injuries to the urethra or the prostate gland, and on the way of avoiding these accidents; nor does he allude to the importance and decided advantages of administering opium or chloroform, particularly the former, just before, or immediately subsequent to, the use of the dilator. And he might, we think, with perfect propriety have included in his enumeration of the cases to which this plan of treatment is appropriate, others besides such as are "soft and recent."

The following observations on the treatment by *cauterization* are extremely judicious:—

> "Cauterization, properly used, is a valuable curative agent; but if indiscriminately employed it is capable of doing serious, if not irreparable, mischief. The circumstances to which it seems to be more particularly adapted and to which, in my judgment, it ought to be restricted, are those in which the stricture, without being very tight or extensive, is of a firm, gristly, and resilient character, and in which there is an undue amount of morbid sensibility of the mucous membrane of the urethra. I never resort to it where the obstruction is either very slight or very great; for in the former case I have rarely failed to effect a cure by dilatation, and in the latter I have almost always been obliged to have recourse to division. It may be further observed that cauterization should seldom be relied upon alone, but that its action should always be aided by the bougie or catheter, a mode of proceeding which greatly expedites the cure, and affords an additional guarantee against relapse, which is so apt to occur when this precaution is omitted"—p. 641.

His directions with regard to the use of caustics, both the nitrate of silver and the potassa, the latter of which he has often employed with the most happy effects when the lunar caustic had failed, are worthy of all reliance. But, we would ask, would it not have been well, while setting forth the applicability and the merits of the caustic, to likewise point out its dangers and the objections to its employment? for that there are strong contra-indications to its use cannot be denied.

> "When a stricture is very old, firm, and unyielding, or almost cartilaginous in its consistence, no mode of dilatation, however judiciously and perseveringly employed, can succeed, either alone or in combination with cauterization, and in such a case I never hesitate to resort at once to *incision*, satisfied that nothing else will answer. I have repeatedly had under my charge patients who had been subjected to the treatment by dilatation for months and months, without the slightest benefit, and who were almost instantly relieved by the operation under consideration. This fact has been witnessed again and again by my private pupils, and by the public classes of the University of Louisville. And why should there be any hesitation or doubt concerning this operation? Where are its dangers, or the difficulties of its execution? I confess I cannot see any," &c.—p. 646.

We need not, surely, say that the last three sentences of this quotation prove that the author is so wedded to this method that he has become blinded to its dangers, or that he has closed his eyes to the facts which have been repeatedly cited to caution the profession against its employment. The instruments which he advises for the performance of this operation are substantially like those of Stafford. But, although we cannot speak so approvingly of the treatment by incision, if such a proceeding should become necessary, we should not hesitate to follow the author's directions.

A modification of this operation is that by *scarification.*

> "The process is best adapted to the milder varieties of firm, gristly contractions, seated in the spongy portion of the canal"—p. 649.

The last mode of treatment which Professor Gross expounds is that by *external division.* The operation which he describes is spoken of as being

> "By no means free from danger, and requires the most consummate skill for its successful execution. None but a madman or a fool would attempt it, unless he had a profound knowledge of the anatomy of the parts, and a thorough acquaintance with the use of instruments. Of all the operations of surgery, this is the least to be coveted"—p. 650. "The method described is mentioned in such a way as to induce us to infer that it is the same as that which 'has recently met with a strenuous advocate in Mr. Syme, Professor of Clinical Surgery in the University of Edinburgh.'"

But there is an important difference between the two operations. In that described in the text, p. 651, the position of the patient is the same as in lithotomy.

> "A staff or grooved director, either straight or slightly curved, is *conveyed to the seat* of the obstruction, and confided to an assistant, who also holds up the scrotum. The surgeon, sitting on a low chair, or resting upon one knee, takes a narrow-bladed scalpel, and makes an incision into the raphé of the perineum, about an inch and a quarter in length, taking care, on the one hand, not to interfere with the rectum, and, on the other, not to extend it too high up towards the bulb of the urethra. The knife is plunged in, at the first stroke, to a considerable depth, and is then used to divide, by successive touches, the parts overlying the stricture. Feeling now for the end of the staff, the point of the instrument is inserted into the contracted part, which is next freely divided from before backwards. A catheter is now introduced into the bladder, and the case is treated, to all intents and purposes, as one of lithotomy."

The italics in the above are of our own making. In Mr. Syme's operation,

> "A grooved director, slightly curved, and small enough *to pass readily through the stricture*, is introduced, and confided to one of the assistants. The surgeon, sitting or kneeling on one knee, now makes an incision in the middle of the perineum, or penis, wherever the stricture is situated. It should be about an inch or an inch and a half in length, and extend through the integuments and subjacent textures exterior to the urethra. The operator, then taking the handle of the director in his left, and the knife, which should be a small straight bistoury, in his right hand, feels, with his forefinger guarding the blade, for the director, and pushes the point into the groove behind, or on the bladder-side of the stricture—runs the knife forwards, so as to divide the whole of the thickened texture at the contracted part of the canal—and withdraws the director. Finally, a No. 7 or 8 silver catheter is introduced into the bladder and retained by a suitable arrangement of tapes, with a plug to prevent trouble from the discharge of urine." (*On Stricture of the Urethra and Fistula in Perineo*, by James Syme, 1849.)

The peculiarity of this procedure consists in cutting down upon a grooved director previously introduced *through the stricture*, whereas in Dr. Gross's account "the director or staff" is merely inserted along the urethra *as far as the commencement of the obstruction.* But this element in the operation is of great importance in giving more certainty to the course of the incision, and we think that it renders Mr. Syme's proceeding much the more worthy of imitation.

Professor Gross next directs his attention to polypoid and vascular tumours of the urethra, neuralgia, hemorrhage of, and foreign bodies in, this passage. We have already occupied so much space in our notice of this work that we shall not comment upon these chapters.

Chapters 9 and 10 present respectively a very good exposition of the pathology and treatment of urinary abscess, or, as Professor Gross prefers, and for very sufficient reasons, to term it, "*urethral*," or "*sub-urethral*" *abscess*, and *fistula of the urethra.* The author differs from Sir Benjamin Brodie in not limiting the starting-point of these affections to the lining membrane of the canal, but admits that they may also originate in causes acting from without and involving the lining membrane of the urethra subsequently.

The only remaining topics treated of by Professor Gross are *false passages* from the urethra, *lesions of the gallinaginous crest*, and *inflammation* and *abscess of Cowper's glands.*

We have long trespassed upon the patience of our readers, but the character and bulk of the volume must be our apology. It has afforded us much pleasure and instruction, and we shall always refer to it for advice in cases of difficulty and doubt. We sincerely congratulate its author upon his happy execution of so laborious and responsible an undertaking; and we hope, for our own benefit, for the advancement of professional knowledge in our country, as well as for his peculiar fame, that he will devote his time and talents to other subjects of equal importance to those which he has elucidated.

We shall be expected to speak of the literary and mechanical execution of the book. The style is plain, rather severe; it is not free from inelegancies and inaccuracies, but we attribute them to the author's not having had the opportunity of revising the publication. The plates are admirably done, and the whole appearance of the volume is very commendable.

F. W. S.

ART. XI.—*Letters to a Candid Inquirer on Animal Magnetism.* By WILLIAM GREGORY, M.D., F.R.S.E., Professor of Chemistry in the University of Edinburgh. Philadelphia: Blanchard and Lea, 1851.

DR. GREGORY is a most thorough believer in Animal Magnetism. He believes everything that ever was asserted of it, and is evidently prepared to believe everything that ever will be asserted of it. His is no partial possession. Animal magnetism has as complete control over him as he would ever wish to have over one of his subjects through the "odylic influence" that streams from his fingers, or his eyes, or from his intense will. His belief is not only a monstrosity, but an enormous one. Its big open mouth swallows everything. It would be a small thing to say of it that it "swallows a camel."

We have no idea of writing a formal staid criticism upon his book. Such a mass of folly, though it wear a scientific guise, and come from a professor in the ancient and renowned city of Edinburgh, and is lauded in certain literary and scientific quarters, deserves no such notice. We will glance, however, at some of the notions, or rather dreams, of the professor, as illustrative of the *immense capabilities of human belief.*

Dr. Gregory not only believes in all the different ways in which the magnetic influence is exerted—by passes with the hand, by breathings, by the fixed look, and by the silent but fixed will; but he also believes that the subject needs not to be near the operator. They may be separated by miles upon miles of distance, and by walls of brick and mortar; and yet the effects come. Why should he refuse to believe this? He has seen it exemplified in his own family. Mr. Lewis, "the distinguished negro magnetizer" (negroes being discovered to be highly susceptible subjects, this field promises to be highly cultivated by amateurs), was present at the professor's house one evening, and operated upon the company, about fifty, *en masse.* A member of the family, a lady, who was one of those that chanced to be affected, had a headache in consequence. The professor spoke to Mr. Lewis about it in the morning. He said, "Oh! never mind her headache. I shall think of her some time to-day, and dismiss her headache." At half-past three she was quite sure that the absent Mr. Lewis was magnetizing her, and soon went to sleep and woke up free from the headache. It was of course found that Mr. Lewis did magnetize her at that time, although he was in another street at some distance. How very ungallant, not to say cruel, Mr. Lewis was to wait from morning till precisely half-past three in the afternoon before he relieved the lady! Why he did not do it at once when the professor spoke to him we are not informed.

The magnetic influence, Dr. Gregory asserts, can be sent to any distance attached to some substance, as water, paper, gloves, &c. A Mr. Atkinson, who, though not a physician, employs mesmerism, as Dr. Gregory says, to a great extent as a medicinal agent from pure motives of benevolence, sent a pair of mesmerized gloves to a patient in Paris "suffering from tic"—they "relieved her intense suffering, which all other means had failed to do." He sent "newly-mesmerized gloves" every week, as the old ones not only lost their power, but came back charged with an influence which caused disagreeable sensations, and even gave him a little shock from the lady's tic. A mesmeric cleansing was therefore needed before they could be used again. Mr. Atkinson says, "I have experienced the same sympathetic influence as in the case of gloves from letters, especially if the paper were glazed, and I could thus tell the state of the patient before reading the letter. Sometimes the heat and pricking have been so strong, that I have laid the letter on the table to read without touching it. The influence from a feverish state would cause my hand to feel hot and feverish, even to others, the whole day. On one occasion, on reading a letter from a distance, I had the sensation of tears. It was so strong that I felt sure the writer had been in tears while writing it, although nothing in the case or in the letter led to the conclusion. It proved, however, on inquiry, that the writer had been in tears, and that the tears had fallen on the paper." This same Mr. Atkinson also says, "On one occasion I *breathed* a dream into a glove, which I sent to a lady; the dream occurred"—that is, we suppose, she had the dream the next time that she slept. As he is so benevolent, we presume that the dream he sent was a pleasant one. The learned comment of Professor Gregory upon these statements is that they "tend to throw light upon the propagation of disease by contagion."

The professor is a full believer in clairvoyance in all its modes and forms. Clairvoyants do not see with their eyes at all. Such vulgar means of vision are discarded altogether. They see from the side or back of the head, from the pit of the stomach, &c., and sometimes from no particular part. They see at all sorts of distances, and through all sorts of things. It is generally quite immaterial to a practiced clairvoyant whether she (I say *she*, for clairvoyants are commonly women) is to see and describe things in the room, or in another house, town, or country, or world. "Yet it often happens," says Professor G., "that a clairvoyant, who can see and describe very well all that is in the same room, or the next room, or even in the same house, cannot thus travel to a distance, without passing into a new stage." When once in this "new or travelling stage," the operator can send the subject anywhere, into any house far or near, and she will describe what is passing there. So says our erudite professor, and so say magnetizers generally. If this be so, it appears strange to us that clairvoyance has not played a very considerable figure in revealing family secrets, and making mischief in neighbourhoods. But we presume that the reason is that magnetizers are a peculiarly pure and benevolent class of men, and are uncommonly free from the instigations of the devil.

Sir John Franklin has received a very large share of attention from clairvoyants. They have seen his vessels encased in ice, and described minutely the situation of things—as minutely as some of them described the destruction of the Atlantic just before the news of her safety reached New York. Some clairvoyants predicted the return of Sir John a long time ago. Dr. Gregory finds a ready excuse for this blunder in their benevolence—he thinks it is because they "are strongly affected by sympathy with the feelings and wishes of those who consult them, which feelings and wishes they, as it were, reflect."

Professor Gregory agrees with his brother magnetizers in thinking that clairvoyants have the power of detecting thieves, and cites some cases in proof of it. He mentions a clairvoyant who traced fifteen bales of cotton, which had been stolen from a vessel in New Orleans, to another vessel in Havre. The cotton was found where the clairvoyant said it would be.

If what magnetizers assert be true, it is a little strange that animal magnetism has not been put to more practical use in recovering lost and stolen property, and in detecting thieves, and, indeed, all sorts of criminals. The subject has long been before the community, and there has been ample time to demonstrate most fully the capabilities of animal magnetism in this respect. The public seem to be singularly obstinate in rejecting the precious boon which is offered them by the magnetizers. Although most new things meet with a very ready reception with the multitude, whether scientific men believe them or not, the new discoveries of animal magnetism, though they answer very well for an evening's entertainment, do not seem to be practically believed to any great extent. At least this is the case with the most valuable of them. Though clairvoyants are proved, as is asserted by such wise men as Dr. Gregory, to have such powers, their services have as yet been seldom called for in detecting thieves and other criminals, and never, we believe, by those who are particularly skilled in such matters. The old-fashioned modes of detection are still in vogue with the police. Either the community must be singularly blind to their interests, or Professor Gregory and his compeers are blind to the truth —we will not say which.

We once witnessed an examination of a clairvoyant in regard to some stolen money. All the questions were prompted by a suspicion of a particular individual, and were, therefore, leading questions, and were answered accordingly. Though to us it was a very bungling performance, not having the magnetic capacity of belief, the many mistakes made by the clairvoyant did not prevent the rest of the company from believing it all to be correct. And the thief was followed upon the track marked out, but no such man had been seen by any one on that track, although one of the places where the clairvoyant saw him stop was a public bar-room.

If clairvoyants can see things through walls, through anything, and at great distances, it is not strange that they can see what is within themselves. Upon this power of *introvision*, as it is called, Dr. Gregory thus remarks:—

> "The most eloquent descriptions ever given of the wonders of the human body, never produced half the effect upon the mind which is caused by the simple but graphic words of the clairvoyant, who is perhaps altogether ignorant of anatomy, and yet sees, in all their beauty and marvellous perfection, the muscles, bones, vessels, nerves, glands, brain, lungs, and other viscera, and describes the minutest ramifications of nerves and vessels, with an accuracy surpassing that of the most skillful anatomist. He will trace any vessel or nerve in its most complex distribution; the whole to him is transparent, bathed in delicate light, and full of life and motion. Some at first are terrified at seeing these wonders, but soon learn to admire and delight in them. But it is only a certain proportion of clairvoyants who pass into that particular stage, and as experiments are most frequently made on the uneducated, or half educated, they are often at a loss for words to describe what they see. I cannot doubt that when intelligent medical men shall be themselves rendered clairvoyant, some useful information will be derived from the exercise of this power.
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> "It is easy to understand, that when the sleeper sees his frame in this perfect way, he can detect disorder and disorganization in it. This, indeed, he very readily does, and his diagnosis is often confirmed by that of the physician who attends him when he is suffering from illness.
>
> "The clairvoyant, in some cases, possesses the same power in reference to the bodies of those *en rapport* with him. He describes their structure, and its

derangements; and I have good reason to believe that in some instances, when the disease is of an obscure nature, his diagnosis has proved, and has been acknowledged to be, correct.

"The clairvoyant who possesses this power can often exercise it at a distance, with the help of the hair or of the hand-writing. I have seen it done both ways, and repeatedly with very great minuteness and accuracy. The observations of the clairvoyant have always corresponded to the opinion of the physician who knew and treated the case, but have often gone further, and in the subsequent opinion of the physician, correctly in the cases I have studied."

Now all this is asserted, not by some impudent and ignorant travelling lecturer, but by *Doctor* Gregory, Professor of Chemistry, in the city of Edinburgh. If it be true, what a change it will effect in medical science! Clairvoyance is to be the great means of exploration both in health and disease. Every physician must have his clairvoyant. And he need not leave his study to diagnose disease—a little of the patient's hair, or even some of his writing, will be all-sufficient to reveal his condition. From what toils, what exposures, will this save the physician!

Wonderful as all this is, there are greater wonders still. The clairvoyant, says Professor Gregory, "will often predict the course of disease and its termination, in those persons with whom he is in *rapport* or sympathy." And he mentions a case in which the time of death was accurately predicted six years before it occurred. And this power of *prevision*, as it is termed, has relation not merely to sickness, but exists in regard to all kinds of events. Animal magnetism has restored to the world the gifts of prophecy in the persons chiefly of women and negroes, the latter having been found of late to be peculiarly susceptible as clairvoyants.

But the clairvoyant has not only the power of prevision, but of *retro*-vision also. And Dr. Gregory suggests that "by the means of some very lucid clairvoyants, many obscure points in history might be cleared up, and that by the discovery of documentary evidence." We fear that the public will be as obstinate about this as they have been about employing clairvoyants in the detection of thieves.

The past, the present, and the future, are then, according to Professor Gregory, all open to the eye of the clairvoyant! When all the scientific and learned men in the world shall come to agree with him, and each shall be busy with his clairvoyant, how vast and varied and rapid will be the accumulation of knowledge! A new era will open upon us! All the old lights will become dim, extinguished in the meridian blaze of clairvoyance!

Professor Gregory is a full believer in what is called phreno-magnetism. And from his own account of himself, he is a very skillful player upon the bumps—they always answering to his touch as readily and correctly as the keys of a piano would do. We have heard, in our day, some wrong notes responded to travelling magnetizers as they have played upon the bumps, but we presume Dr. Gregory never makes any mistakes, nor his subjects; he knows just where the organs are, and his subjects undoubtedly know quite as well as he does.

Dr. Gregory informs us that only a few of the clairvoyants can thus have their heads played upon, and, as he is never at a loss for a reason for anything, he thinks that "the sensitiveness to touch over the cerebral organs belongs to a particular stage of the sleep." He gives quite a full account of two cases in which the cerebral music was exactly to his mind. Of one of them, he says, "If, while benevolence was in action, I touched acquisitiveness, he instantly collared me to recover what he had given me; if combativeness was touched, before I could remove the finger, he had struck out with his fist, and assumed a very pugnacious attitude. When I combined benevolence and acquisitiveness, he pulled out money and offered it; but, on my attempting to take it, always withdrew it, his eyes being closed, and told me he required it more himself. When in the act of falling on his knees, veneration being touched, the slightest touch on self-esteem sent him up like a shot, or combativeness made him attack, in the fraction of a second, who ever happened to be before him. In short, I could *play* on him exactly *as on an organ*, producing any expression, gesture, or action I pleased, simple or combined." This, with the addition of the baby scene, produced by touching philoprogenitiveness, is a very good representation of the exhibitions of phreno-magnetism made night after night, with all the marks of a thoroughly learned lesson, by travelling lecturers.

Dr. Gregory speaks of some peculiarities in this case. "I could excite," he says, "laughter by touching the organ of gaiety or mirthfulness. But I could also cause laughter by touching the angles of the mouth, when it often became very violent. In either case, I had only to touch the middle of the chin, in order instantly to change the laugh into the profoundest gravity. This fact was pointed out to me by Mr. Bruce, who had studied the case four years before. He also told me that touching a certain part of the leg caused the young man to dance. I tried this, but probably did not touch the right spot, or touched it too strongly, for the result was a sudden and most violent kick, fortunately received by a table, and accompanied by a very angry pantomime. This I saw several times." As this clairvoyant had been practicing at least four years, it is no wonder that, like a true amateur, he added some "peculiarities" to the otherwise monotonous exhibitions of phreno-magnetism. But these peculiarities are very peculiar. Professor Gregory accounts for them by saying that "the effect of touching certain parts of the body no doubt depends on their nervous connection with the brain." That is, the corners of the mouth in this clairvoyant had a "nervous connection" with the organ in the brain that makes us laugh, the middle of the chin with that organ that makes us grave, a particular spot on the leg with the organ that makes us dance, and another spot, so close to the last that even so acute an observer as Dr. Gregory mistook between the two, with the organ that makes us kick with violence and anger—some department, we suppose, of the organ of combativeness. Dr. Gregory hints that perhaps he touched the dancing spot, but "too strongly," and therefore kicking resulted in place of dancing; but we think that on further reflection he will conclude, that it is more probable that the kicking and dancing spots are distinct, but lie very near together. Indeed, some further experiments with this clairvoyant, under the observant eye of Dr. Gregory, might settle the matter. He has settled quite as nice points before. For example, he says, "In the region of the supposed organ of alimentiveness, I found within a small space three different points, the touching of one of which produced excessive desire to eat, of another the desire to drink, of the third, sensations of smell. To obtain these results, it was necessary only to move the point of the finger one-fourth or one-eighth of an inch, the three points lying in less than the surface of a shilling." Now the nice fingers that made this discovery are certainly competent to decide beyond a doubt whether the "nervous connections" with the dancing and kicking organs are in one spot, or in two different spots.

Professor Gregory thinks that Baron Von Reichenbach has discovered the existence of a power, or force, or influence, or fluid (for all these terms are used in relation to it), which he calls odyle. It is analogous, it is said, in many respects, to the imponderables, light, heat, &c. It is the agent which, in his view, produces all the various phenomena of Mesmerism, Animal Magnetism, Electro-Biology, Hypnotism, Psychology, &c., with which believers in such things have been dazzled for the last half century. Dr. Gregory speaks of the "odylic atmosphere of the operator," which it seems is distinctly "luminous" to many "lucid persons," and the phenomena are to be attributed to "emanations" of this odyle, which "traverses space as light does; only, as appears from the observations of Reichenbach, not quite so rapidly."

In explanation of clairvoyants seeing things at a distance, Professor Gregory says, "It is obvious that to an influence like odyle, as to light, distance may be a matter of no importance." But this does not exactly explain why they see through walls of stone, or brick and mortar. If the odyle goes through them, light, which he compares to it, does not—in this respect, these two imponderables differ, which Dr. Gregory, with all his acuteness, has failed to notice. Perhaps odyle is more penetrating than light, or is more diffusible, and so gets round obstacles more readily than light does. It seems to move in very straight lines, in some cases at least, for, when Dr. Gregory plays on the keys of the cerebral organ in phreno-magnetism, the odyle goes straight to the organ pointed at, and there is no escape of it to the neighbours, even though it may be small, and may stand amid a cluster of small organs. There is no getting away from facts, however; and what if odyle does sometimes go very straight, and at other times take a crooked and winding course! So subtle a thing may, of course, be very accommodating—it must be, in order to produce such a variety of results as Professor Gregory attributes to it.

We have no idea of treating extensively of this new imponderable, but will merely notice some of its modes of operation.

Dr. Gregory tells a story about "an old house near Edinburgh, long since fallen down," of the truth of which he has no doubt (doubting being a thing to which he is little accustomed), and he endeavours to account for the facts by animal magnetism. A box of bones was found, he says, upon the premises; and he accounts for the ghosts by supposing that the odyle from those bones entered the brains of those who saw them, and there produced the visions.

Where past events are seen by the clairvoyant, Dr. Gregory supposes that he "follows their odylic traces upward." That is, every event sends down the stream of time an "odylic trace," and the clairvoyant (*how*, he does not inform us) follows it up till he comes to the event itself. He does this very much as "a dog, liberated from confinement, traces his master." This theory, he says, "agrees with that old one, which maintains that every event leaves an indelible trace, which continues to exist as long as the world to which the event belongs." But how the clairvoyant sees *future* events it seems to puzzle even Professor Gregory to tell. The "odylic traces" fail him here—no odyle can come from things which do not as yet exist. Though he hints that some explanation may be found in the old saying that "coming events cast their shadows before," and that the present contains the germs of all that is future, he says, with an air of doubt and carefulness we have not seen in him before, "We come here on ground which quakes and gives way beneath our feet." But he says also, "I hold fast to the facts;" and he is very sure that "patient and persevering research, carried on in the sincere love of truth, will, in the end, enable us better to understand even these obscure phenomena." And we have no manner of doubt that his expectation will be realized. For minds, like those of Reichenbach and Professor Gregory, that are satisfied with the very "luminous odylic" explanation of *retro*-vision, cannot exist long without having quite as satisfactory an explanation of the mode of seeing coming events. For our part, we are puzzled to know why Dr. Gregory, who has explained to his own satisfaction so many mysteries quite as great, all at once balks at this.

Professor Gregory very strongly commends the study of animal magnetism to those who have the care of the insane. He says that, "in many cases the essence of insanity is some disturbance of the natural distribution of odyle in the system." He believes in the old idea of the agency of the moon in causing insanity, and says, "the effect of the moon on the insane" is to be referred to the fact that its rays are "strongly charged with positive odyle."

Odyle, he thinks, is the agent in all sorcery, witchcraft, magic, divination, demoniacal possession, &c.

Even love comes of odyle. The arrows of Cupid, according to Dr. Gregory, are nothing but "emanations of odyle." On this subject, he thus discourseth: "Sympathy often produces a strong attraction between two persons who see each other for the first time. Neither of them can explain it, but both feel it, and their love at first sight is no fancy, but a reality. It arises, in part, from a pleasing correspondence between the magnetic influences of the parties, and when this is the case, it is as durable as strong. Nay, it is well known that there are many persons who frequently quarrel after being long together (disturbances of the odyle, we suppose), yet are quite wretched if separated, and infallibly come together (by the force of odylic attraction of course), till a new quarrel again forces them asunder; again to feel miserable apart." What scientific sentimentality! Dr. Gregory will, ere long, be the poet-priest of animal magnetism!

Antipathies, too, come of this busy odyle. Dr. Gregory does not tell us *how*—he only gives us the fact, which we suppose he, or Reichenbach, has demonstrated to his satisfaction, and *therefore* it is a fact. Whether the antipathy be to a person, an animal, or a substance, the odyle somehow causes it.

Professor Gregory thinks that odyle, or magnetic influence, is the cause of numberless wonderful phenomena in animals. He almost resolves all instinct into odyle. After speaking of bird-charming and horse-taming, he says, that "Miss Martineau has also recently published a case, in which she not only magnetized a cow suffering from acute disease, but cured the animal by magnetic treatment." An interesting episode this would make in a Bucolic, illustrative of odylic love; perhaps Professor Gregory will try his hand at this.

The "snail telegraph" is adduced by Professor Gregory as a striking example of the agency of animal magnetism, as the source of sympathy in animals. The account which he gives of it is this: "Every letter has a snail belonging to it in Paris; while in America, each letter has also a snail sympathetic with that of the same letter in Paris; the two snails of each letter having been at some period, and by some process, brought into full sympathy, and then separated and marked. There is, of course, a stock of spare snails for each letter in case of accident; but it is found that these animals will live for a year without food, should that be necessary. When a word is to be spelled in Paris, the snail belonging to the first letter is brought by some galvanic apparatus, not yet fully described, into a state of disturbance, with which his fellow in America sympathizes. But this requires to be ascertained; which is done by approaching in America to all the snails successively a testing apparatus, not described, which, however, contains a snail. On the approach of this, the snail whose fellow in Paris has been acted upon, exhibits some symptom which is not exhibited by any other, and the corresponding letter is noted down. This is done with each letter, and thus the word is finally spelled.

"Now all this may appear at first sight," continues Professor Gregory, "very absurd and ridiculous. I confess (indeed!) it appeared so to me when I first heard of it. But, when I recollected all I had seen of sympathy in man, and all that was known about sympathy in the lower animals; and when I read the account given by M. Allix, a gentleman well versed in science, of the successful experiments at which he had assisted, I perceived that the only difficulty lay in admitting the fact of the extraordinary sympathy of snails, and that this being granted, all the rest was not only possible, but easy." The details of this new "discovery" have not yet been published, although the discoverers, two Frenchmen, "have been for ten years engaged in bringing their discovery into a practical form." But Dr. Gregory seems to think that the facts are well attested, and says, "It will certainly be very remarkable if a snail telegraph should come into action; which, in spite of the proverbial slowness of the animal concerned, should rival in rapidity the electric telegraph, and perhaps it in security; inasmuch as there are no wires to be cut by an enemy, besides being infinitely less costly; since no solid tangible means of communication are required, and all that is needed is the apparatus at either end of the line, and the properly prepared snails."

But there are other wonders to come besides the snail telegraph. The anticipations of Professor Gregory are brilliant, and fill him with enthusiasm. As we have a galvanometer and a photometer, he expects that we shall soon have an odylometer to measure all quantities of odylic force. But this is not all. He expects that we shall, ere long, have "an odylic battery, just as we have a galvanic battery," and says that, "when we shall have thus obtained the power of odylically affecting every man, a vast step will be gained." We agree with him that such discoveries as these "would at once do the work of a century in promoting the progress of odylic science." If the laboratory of the professor could be graced with the odylometer, the odylic battery, and the snail telegraph, what a blaze of odylic light would be concentrated there from the past, the present, and the future! And who could endure it but those whose bodies had been long "bathed in odylic light," and whose minds had been long saturated with odylic belief?

Such are some few of the notions and statements which we find in Professor Gregory's book. As we have read them, we have paused, we know not how often, and asked, Can it be that Dr. Gregory, the Professor of Chemistry in Edinburgh, really believes as he writes? May it not, after all, be a burlesque?

It was no part of our intention to examine critically, and to any extent, the subject of animal magnetism. The folly and falsehood which have been put forth under this name are mixed with so little that is true and valuable that we do not wonder at all that reasonable and scientific men are so little disposed to look into these subjects. There is so little wheat amid the abundance of chaff, that it is not worth the sifting. The time which would be consumed in doing it may be much more advantageously employed in fields of knowledge which yield a much larger and surer return for our labour.

We have seen enough in the exhibitions which have been made, and in the books which have been published, to convince us that the little that is true of all which is included under the name of animal magnetism, is to be attributed solely to certain *nervous conditions induced through mental influence.* The mixture of imposture with these conditions is a very strange mixture, it is true; but it is not an incompatible one. What physician of any experience has not seen occasionally in hysteric patients just this mixture? The prospect of notoriety, and that too among the titled, the rich, and the scientific, to say nothing of pecuniary compensation, suffices to convert many such patients into very skillful clairvoyants.

Sometimes there is no such mixture, but the exhibition is sheer unmixed imposture. And the operator, though he may not be an amateur, but an out and out impostor, is not always able to discern pure imposture from that which is not. We have seen a very celebrated magnetizer thoroughly in doubt whether a roguish boy was really in the so called magnetic state, or was playing a trick upon him. And we have known persons, as a matter of sport, to mingle among the subjects of the psychologist (so called) who, in obedience to his directions, were playing all sorts of antics, because they thought that they could not help doing so, and while they duped the operator, they acted their parts quite as much to the satisfaction of the audience as the dupes themselves.

While the amateur and scientific votaries of this science are for the most part duped by their subjects, we have no doubt that the lecturing exhibitors of animal magnetism, in its various forms, are as arrant a set of impostors as ever duped any community. And yet, whenever one comes along, a large audience is gathered, and among them are many of the intelligent and the influential, and some clergymen, of course, and generally some physicians. The exhibition is at least amusing; and the imposture is so well managed that but few have acuteness enough to detect it, if they wished to do so. The farce of having a committee of wise men to watch the operator is always gone through with as a matter of course, as giving an air of honesty and respectability to the exhibition. But any fair and thorough testing is most scrupulously avoided. We once made a proposition for such a testing to one of the most skillful and respectable of these travelling magnetizers, but though the fairness of the proposition was admitted, he continued with various excuses to delay the examination, till he had gone through with all his public exhibitions; and then he had no time to spare, even at a high compensation which was offered him, because he was in haste to go on, and dupe other communities.

It is worthy of remark that these lecturers seldom, if ever, appear a second time in the same place, however great their success has been. In large cities, it is true, it may be otherwise, because there the material for fresh audiences is abundant. So, too, the career of each lecturer is apt to be a short one—there is a constant succession of them. For the same reason the "science" continually changes its name, and appears with a new phase; and so we have Mesmerism, Animal Magnetism, Pathetism, Electro-Biology, Hypnotism, Psychology, &c. The subjects, too, however famous they become, do not last long, and new ones rise to take their places. And those localities where animal magnetism has made its most signal displays, and astonished and led captive almost the whole community, have in a little time lost all knowledge, all "trace," of the odyle that was there, so that one would suppose that some strange power had utterly banished this agent, though for a time the place was "luminous" from its presence. Perhaps no place in this country has been more famous for the doings of animal magnetism than Providence was some dozen years ago. The odyle was then so abundant there that its "emanations" drew (we suppose by their peculiar attractive power) many pilgrims to the favoured spot from distant places. Among them was Colonel Stone, who published his experience in a pamphlet, which was for a time very famous. But short was this brilliant display of odyle there. The reason is probably to be found in the fact, which Professor Gregory comments upon in his work, that odyle has, like electricity, a strong tendency to an equilibrium, of course preventing any excessive accumulation of it from continuing any length of time. Colonel Stone's pamphlet, M. Poyen the operator, and Miss Bracket the subject, soon ceased to be "luminous," and went into the shades of forgetfulness; and the people of Providence are to this day in entire darkness on the subject of animal magnetism. Their "odylic light" is not only in total, but as it seems in final eclipse.

Professor Gregory makes great complaint, again and again, that scientific men, and especially physicians, have neglected animal magnetism, and throws out the usual threadbare allusions to Galileo, Copernicus, Harvey, Jenner, &c. This might be expected of quacks and travelling exhibitors—they have the excuse of ignorance. But a professor in Edinburgh must know better—he must know that new things are not treated now as they were in the dark times of Galileo and Copernicus, when antiquity bore such sway; and that the discoveries of Harvey and Jenner, though they met with opposition, were in the course of a few years welcomed by almost the whole body of the medical profession, and, therefore, furnish no parallel to the steady rejection with which animal magnetism, and its associate phantasm homœopathy, have met from them for more than half a century.

Dr. Gregory begins his book with a laboured consideration of the various objections which have been brought against animal magnetism. He manages this quite dexterously, misrepresenting some objections, trumping up some that were never adduced by intelligent and scientific men, and avoiding continually the real points at issue in the case. The main, the grand objection he does not state, nor even allude to it with any distinctness—viz., *that the alleged facts are most of them not proved.* Though the believers in this "science" make great boast of their facts, they are exceedingly loose in regard to the evidence upon which their facts rest. The main points are often wholly neglected. A single example will suffice, though a multitude might be cited. It is a case of which Colonel Stone makes great parade in his pamphlet. He gave the clairvoyant a sealed packet with a very odd sentence in it, a part of which she read, as the colonel supposed, without opening it. But how did he know that she did not open it? Simply because it was a day or two after returned to him apparently in the same state as he gave it to her. This he considered to be good proof. But we do not—it is defective in its most essential point. If she could read the packet without opening it, why did she not do it in Colonel Stone's presence? There is not a particle of evidence offered to show that any one saw her do it. The true test was an easy one, but it was not applied. There is such a thing as skill in opening seals and replacing them so that it is not easy to detect it. And until we have the proof that this was not done, we are not warranted in believing that the clairvoyant read through the envelope. Another similar case is given in the colonel's pamphlet, against which the same objection lies.

Similar defects in the evidence upon which animal magnetizers ask for our belief are continually presenting themselves. And they seem utterly blind to the proofs of imposture on the part of their subjects. The occasional detection of them by others of less credulity does not seem to open their eyes in the least. The Okeys, that duped Professor Elliotson and a formidable troup of scientific and learned men in London, were at length proved beyond all doubt to be impostors—but the believers believed still. And so of other cases. Those who are once thoroughly possessed with the spirit of delusion are seldom converted from their errors.

It is curious to observe how belief in one absurdity prepares for belief in others. A propensity is created which manifests itself whenever the occasion presents. The possession is ordinarily such that the spirit of delusion may well be termed *legion.* Most various and incongruous are the beliefs which it generates. It is eager for all novelties. For this reason we had not a doubt, after reading a little way in Dr. Gregory's book, that he was a believer in homœopathy, and we found in the latter part of it that it really was so. And we presume that Professor Henderson, the great representative of homœopathy in Edinburgh, like his master Hahnemann, is a full convert to animal magnetism—if it be otherwise, it is an unwonted phenomenon. The same transgression of the rules of evidence which is required for the belief of the one is required for the belief of the other.

We know nothing of Dr. Gregory's standing as a professor of chemistry. Chemistry is so exact a science that the rules of evidence which apply to it are very simple. And Dr. Gregory does not seem to understand that, when he passes from chemistry to the examination of the phenomena of life, and spirit, and disease, mingled and complicated as they are, vastly more caution is needed in order to ascertain the truth and avoid error. One thing is certain, that Professor Gregory's dabbling with animal magnetism will not improve him as a teacher of chemistry. The moment that anything complicated shall occur—anything in which credulity or a disposition to theorize will be apt to lead astray—Dr. Gregory will be led into error. It cannot be otherwise with one who expects ere long to see in his laboratory an odylometer, an odylic battery, and perhaps a snail telegraph.

As to the complaint made by Professor Gregory, that physicians and scientific men generally refuse to look into animal magnetism, we remark that, *in every case where they have examined it with any thoroughness, most of its pretensions have been proved to be false.* And this leads us also to remark, in conclusion, that the duty of all intelligent men clearly is, either to have nothing to do with it, or to test its merits according to the strict rules of evidence. The half-way examinations which they have bestowed upon it, as exhibited by travelling lecturers, have only given currency to this delusion, and through this to others; and thus respectability, and honesty, and even science have been made to favour tendencies, which, by encouraging loose habits of reasoning and belief, are undermining the very foundations of truth. In this way, physicians have encouraged that loose and theorizing observation which, more than any other cause, has retarded the progress of medical science; and clergymen have fostered errors which are cutting loose many minds from all reason, and of course from all rational religion. W. H.

BIBLIOGRAPHICAL NOTICES.

Art. XII.—*Surgical Anatomy.* By Joseph Maclise, Surgeon. (With coloured plates.) Part IV. Philadelphia: Blanchard and Lea, 1851.

We are very glad to see that this excellent work approaches so nearly to its conclusion. "The four parts now issued contain sixty-two plates, being the number originally promised and expected to complete the work, when the first part was published. The increased number of plates will, however, render a fifth part necessary, which will shortly be ready. Price only one dollar."

Our readers will, perhaps, recollect that the third part of this book, noticed in a former number of the Journal, was taken up with the illustration of Hernia, the particulars of which were very fully exposed. We shall, in the course of the following notice, set forth the topics which the present fasciculus is intended to exhibit.

Plate forty-seven, the first of this division, represents "the Surgical Dissection of the principal Blood-vessels and Nerves of the Iliac and Femoral regions." The author remarks, "The main artery of the lower limb is usually described as divisible into parts, according to the regions which it traverses. But, as in examining any one of these parts, irrespective of the others, many facts of chief surgical importance are thereby obscured and overlooked, I propose to consider the vessel *as a whole*, continuous from the aorta to where it enters the popliteal space"—p. 105. And this he does without neglecting the relational anatomy of each of the ordinary artificial divisions of the vessel. This we consider one of the important characteristics of Mr. Maclise's treatise; that he looks upon and demonstrates the anatomy of each region, and of each prominent element of each region, as part of the whole organism, having with it inseparable ties, but more particularly connected with some great segment of the body. In the chapter explanatory of the plate, the mode of origin of the iliac vessels is indicated, together with the point on the skeleton which may serve as a guide to the seat of the division of the aorta; then the course of the vessels is traced, and their connections with the other component parts of the iliac and femoral regions are described, until they leave this part of the lower limb. The best points for securing the artery in the different sections are also commented on.

Plates forty-eight and forty-nine illustrate "the Relational Anatomy of the Male Pelvic Organs." And in connection with them, the relation of the organs of the abdomen to those of the pelvis is referred to in the different acts to which both are subject under the influence of the thoracic and abdominal muscles. The situation, connections, form, dimensions, &c., of the *urinary bladder*, under varying circumstances; the disposition of the *peritoneum* with reference to this organ; the important parts situated about the neck of the bladder and the rectum; the vascular peculiarities of the pelvic cavity—these are the subjects of the comments attached to the plates.

"The Surgical Dissection of the Superficial Structures of the Male Perineum" is exhibited in plates fifty and fifty-one. These plates present five different views of this part. The chief topics which the author elucidates in his explanation are, the continuity of the superficial fascia of the abdomen and the perineum, and the mode in which this important tissue is distributed over the lower part of the belly, the scrotum, and the perineum, so that its great function, in a surgical point of view, is effected, viz., the limitation of urinary infiltration; and the constitution of the perineum beneath this fascia, its component structures, its boundaries, and its relations to the different organs contained in the pelvis. And to give the remarks a practical bearing, the operations implicating these parts are glanced at. This is an exceedingly interesting and valuable chapter. It forms an admirable introduction to that which succeeds it, on the surgical dissection of the deep structures of the male perineum, and the lateral operation of lithotomy, elucidated by four drawings.

The commentary on plates fifty-four, fifty-five, and fifty-six refers to the surgical dissection of the male bladder and urethra, and comprises an account of the lateral and bilateral operations of lithotomy. To this chapter are attached eight lithographs. In this comparative view of the two operations for the removal of stone from the bladder, the author exhibits the incisions made in each, and contrasts them with reference to their respective merits, as avoiding the dangers to which each is exposed, and as offering facilities for the extraction of the calculus. In addition to this, some excellent views are given of the course of the urethra, and the obstacles to the introduction of the catheter.

Plates fifty-seven and fifty-eight and the associated remarks are explanatory of the congenital and pathological deformities of the prepuce and urethra—as well as of stricture and mechanical obstructions of this canal. For the illustration of these, twenty-six views of the parts are presented. These drawings are of value, inasmuch as they represent, as we gather from the text, *bonâ fide* cases of congenital and accidental derangement.

In plates fifty-nine and sixty, comprising twenty-five separate drawings, we have exposed the various forms and positions of strictures, and other obstructions of the urethra, false passages, and enlargements and deformities of the prostate. The subject of deformities of the prostate, and the consequent distortions and obstructions of the prostatic portion of the urethra, is contained in the concluding chapter, and is further illustrated by twenty drawings in plates sixty-one and sixty-two. Thus, it will be perceived, we are in the last six plates furnished with a valuable series of prints (seventy-one in number), exhibiting the ordinary and the unusual causes which interfere with healthy urination, and many of the bad effects resulting from careless efforts to relieve the difficulty.

In our notice of one of the preceding parts of this valuable publication, we took occasion to allude to the philosophical analogies which Mr. Maclise pointed out as traceable between organs and parts apparently dissimilar. The author is evidently fond of studying anatomy as a science embodying profound laws of harmony and beauty, and of endeavouring to unravel these. But, however praiseworthy and deserving of encouragement this may be, and however much it elevates the study of anatomy above the mere grasping after isolated facts, there is certainly the same danger of drawing false analogies and inferences here, as in every other similar investigation; in mineralogy, geology, or botany, for example. And in the last chapter, we think that Mr. Maclise has stumbled upon this very difficulty. He says, p. 133, "The prostate is peculiar to the male body; the uterus to the female. With the exception of these two organs, there is not another which appears in the one sex, but has its analogue in the other; and thus these two organs, the prostate and the uterus, appear, by exclusion of the rest, to approach the test of comparison by which their analogy becomes as fully manifested as that between the two quantities $a-b$, and $a+b$; the only difference which exists depends upon the subtraction or addition of the quantity, b. The difference between a prostate and a uterus is simply one of quantity, such as we see existing between the male and female breast. The prostate is to the uterus absolutely what a rudimentary organ is to its fully developed analogue," &c. He also says, "This body is not a gland any more than is the uterus;" "the prostate has no function proper to itself *per se*;" "in texture the prostate is similar to an unimpregnated uterus. In form, it is, like the uterus, symmetrical. In position, it corresponds to the uterus. The prostate has no ducts proper to itself. Those ducts which are said to belong to it (prostatic ducts) are merely mucous cells, similar to those in other parts of the urethral lining membrane," &c. We have always regarded this hypothesis as a sort of *transcendentalized transcendentalism.* The optics and the sensorium which can see as much resemblance between a prostate gland and a uterus as between a male and female breast, or a vertebra of the lumbar region and one of the bones of the coccyx, must be as far removed in perceptive powers above those of Swedenborg and his most favoured disciples, as heaven is high above the earth. Mr. Maclise's assertion that the prostate is not a gland, and that it has no ducts, may be met by reference to the dissections of this body by Henle, Huschke, Müller, Quecket, Jones, and others, who describe its follicular structure, and the little ducts which issue from these follicles, lined by a continuous epithelial membrane, and containing the same fluid. Its function is not positively known, it is true; but the suggestion of Mr. Adams (Vid. *Cyclop. Anat. and Physiol.*, part 31, p. 154), that the acidity of its secreted fluid may serve to prevent the tendency to inspissation of the alkaline spermatic secretion, and thus to favour the ejection of the latter, may be the clue to its real purpose in the economy. And if an analogue to the uterus be wanting to render the male complete in Mr. Maclise's view, surely the "*utriculus prostaticus*" offers a much more striking analogy to that organ, in its shape, and in its position between the two ejaculatory ducts, which, though they do not generally open into it, do occasionally communicate with its interior, as is said by some anatomists. Huschke, who has paid considerable attention to this curious anatomical question, draws the following inferences from his observations: 1st. That the "utriculus" is a male uterus. 2d. That it is originally a receptacle of spermatic fluid. 3d. That its development bears an inverse proportion to that of the true seminal vesicles and the prostate gland, perhaps even in man. 4th. That it is at a late period a mere rudiment of fœtal life, divested of all importance. (Huschke, *Encyclopédie Anatomique*, vol. v. p. 382.)

But this is a mere wandering of the imagination on the part of Mr. Maclise, and does not in the least detract from the merits of his most valuable contribution to surgical science. We will not quarrel with him on this account; "aliquando dormitat bonus Homerus." F. W. S.

Art. XIII.—*Urinary Deposits; their Diagnosis, Pathology, and Therapeutical Indications.* By Golding Bird, A. M., M. D., F.R.S., F. L. S. Assistant Physician, and Lecturer on Materia Medica and Therapeutics, at Guy's Hospital, &c. &c. &c. Second American, from the third and enlarged London edition. Philadelphia: Blanchard and Lea, 1851.

This work of Dr. Bird has, through its former editions, acquired a celebrity which places it among the standard publications of the day; and would require but the announcement only of a new edition, were it not that it has received, at the author's hands, so complete a revision as to render it quite as much a new work as many which are issued from the press under this title. After the first thirty pages, it will be found, on comparing this with the former editions, that the changes and additions are so frequent as to preclude any design of their enumeration. Every two, or more pages, there appear new wood-cuts, additional observations, and the incorporation of later information of an authentic character, and re-modification of former statements in correspondence with the present condition of our knowledge in this department; presenting, in a succinct form, a complete view of the state of investigation in this speciality of medical science. The existence in the urine of creatine, creatinine, and other substances found in flesh; of fatty matters; of casein during lactation, &c.; variation in the appearances of this secretion in colour from excess of purpurine, in consistence from urate of ammonia, in quantity sufficient to gelatinize on cooling; alteration in composition from the nature of ingesta, and period of taking the food, and from functional and organic disease in the different organs, together with the pathological indications to be derived from this source, are some of the points which have engaged the author's attention. Therapeutic indications in the varied conditions of the urine are also noticed, and the effects of remedies: as colchicum on the secretion of uric acid, and the oxalic diathesis; borax, phosphate of soda and ammonia, &c., in retaining uric acid in solution, &c. Although this notice comprises, in a very general manner, but a portion of the new matter introduced, it suffices to present an idea of the extent of revision to which the work has been subjected. The American edition has been issued in form and size to correspond with the allied works proceeding from the same publishers, and is well suited to the convenience of the student. R. B.

ART. XIV.—*Principles of Physiology, General and Comparative.* By WILLIAM B. CARPENTER, M.D., F.R.S., F.G.S., etc. etc. etc. Third edition. With three hundred and twenty-one wood engravings. Philadelphia: Blanchard and Lea, 1851. 8vo. pp. 1098.

THE necessity of an acquaintance with the physiology of the human organism as a guide in the investigation of its various pathological conditions is now universally admitted. Every means, therefore, calculated to facilitate the study of the actions of living organized matter, from the simplest to the most complicated forms in which it presents itself, with the forces by which these several actions are produced, governed, and modified, and the reciprocal relationship they hold to each other, becomes of importance. One of the most efficient aids to this study is unquestionably comparative physiology. Commencing with an investigation of the vital forces and functions exhibited in the lowest order of living beings, and, as we ascend upwards in the scale, tracing the modifications in the structure and vital actions, as the organism becomes more and more complex, and new forces are brought into operation, and new functions are developed, we are enabled, in some measure, to study the physiology of the several vital forces and functions separately, and are thus better prepared to understand the operation of these forces, and the true character of these functions in the complicated organism of the higher class of animals and man.

The attempt to analyze the different functions of living organized matter, and the forces by which they are maintained and governed, by venesection and other experiments performed on living animals, cannot lead in every instance to satisfactory conclusions, from our inability to determine whether the phenomena produced are not due more to the violence inflicted by the experiment than to the isolation of parts intended to be affected by it. Although the facts derived from comparative anatomy may not be sufficient to do away entirely with the necessity for experimenting upon living animals, still so far as these facts go they furnish conclusions of a more positive and satisfactory character. It is from these facts alone that we can expect to derive any insight into the supposed correlation of the several vital forces, and of these with the purely physical forces operating in the inorganic world; and as the establishment of such a correlation would lead us to a clearer conception of vitality than we have yet attained, the study of comparative physiology becomes, even in this particular, one of primary importance. In whatever point of view, in fact, the subject is viewed, whether as an interesting branch merely of natural philosophy, or as a guide to the more intricate questions connected with the physiology of man, the study of comparative physiology becomes a desirable, if it be not an essential branch of medical education.

The work of Dr. Carpenter obviates every objection that might be advanced to entering upon this study from the want of a clear and comprehensive treatise embracing a correct view of the existing state of knowledge in reference as well to general as to comparative physiology. Availing himself of the best and most recent information he could procure upon each department of the subject, and devoting considerable time and attention to the verification of the statements of other observers, especially on points under dispute, he has orderly and methodically digested and arranged the materials thus obtained, as well as a large amount drawn from his own original inquiries, so as to place the knowledge of many within the reach of any one who may feel desirous of acquiring it with no further trouble than the careful perusal of a few hundred pages, the production of which has cost the author much and prolonged labour.

Dr. Carpenter has succeeded so well in embodying in the present treatise the general aspect of the science of which he treats, and in teaching the leading facts embraced in it, in a style so plain and withal so explicit, that many who commence the volume without any design of studying it thoroughly, will be allured onward until they shall have mastered the whole of its interesting contents.

Though professedly the third edition of "The Principles of General and Comparative Physiology," the treatise before us is to be viewed in some measure as a new work. Out of the 1080 pages of text, not above 150, or less than one-seventh, belong to the previous edition; this fact evinces the desire of the author to spare no pains, in order to render the volume a faithful exposition of the present state of physiological science.

To present an analysis of so voluminous a work as the present, in which so many subjects of deep interest are treated of, and so many intricate questions, connected with the biotic forces and actions, are discussed, would be impracticable; and to enter into a criticism of the several doctrines inculcated would necessarily extend our notice to an unreasonable extent. Notwithstanding, as already remarked, the author has, in the selection of his materials, endeavoured to avail himself of the best and most recent information he could procure, it is scarcely to be expected, as he himself remarks, that he should be equally well informed upon every point, and those who have followed particular departments into detail, will doubtless find scope for criticism in what they may regard as deficiencies or even errors. Dr. Carpenter desires that his work may be estimated by its general merits; and rather by what it *does* than by what it does not contain. It would have been, he adds, far easier to expand it by *mere compilation* to twice its present dimensions, than it has been found to compress the collected materials within the space they even now occupy.

It is to be regretted that Dr. Carpenter should be allowed to anticipate not the slightest pecuniary recompense for the time and labour he has bestowed upon the production of the valuable treatise before us, but, on the contrary, a certain loss, involved in the relinquishment of other literary engagements of a remunerative character. We are assured that the sale of the entire edition will not do more than remunerate his liberal publisher for the very large outlay which he has incurred in bringing out the work, and more especially for the beautiful series of illustrations with which it is embellished. We had hoped that, inasmuch as the work of Dr. Carpenter is the only systematic treatise, embracing the principles of general and comparative physiology, within the reach of the English student, this, in connection with its intrinsic value, would insure the sale of a sufficient number of copies and at a price to remunerate both publisher and author. D. F. C.

Art. XV.—*Transactions of the Medical Society of the State of Pennsylvania at its Annual Session, held in the city of Philadelphia*, May, 1851. Vol. I. Published by the Society. 8vo. pp. 128.

In the present volume of their Transactions, the State Medical Society of Pennsylvania give an earnest of their zealous co-operation with the societies of the other States in perfecting the organization of the medical profession throughout the Union, as well for the faithful administration of a correct ethical discipline among its members, as for the enlargement of the common stock of professional knowledge, by a careful study of the endemic diseases of each section of the country, in connection with its medical topography.

The session of 1851 was unquestionably a most interesting one, not so much from the importance of the business transacted, as from a good example being given in the reports received from a portion of the counties, which, it is believed, will be followed up at each succeeding session, until the materials shall be accumulated for a complete history of the medical topography and prevailing diseases of the State.

The reports embraced in the volume before us, though all valuable, differ considerably in their extent, and in the amount of positive observations upon which they are founded. Some can be considered only as outlines to be filled up, hereafter, by the results of further and more extended investigation; others, however, especially that on the topography and diseases of Berks County, are drawn up with great ability, and in their manner and matter may serve as models for future reports from the other counties.

The character of all of the reports before us is sufficiently encouraging, and, under all circumstances, equal to what we had a right to anticipate. It is only recently that any attempt has been made to organize the profession throughout Pennsylvania, and by concentrating the labours of the numerous talented physicians scattered over the interior of the State, in rural and often sparsely populated districts, to render available, for the instruction of all, the facts and deductions collected by each within his own field of observation. Many, immersed in the engrossing duties of a wide range of country practice, have neither the time nor inclination to draw up a formal report, but are able, nevertheless, to contribute valuable materials; and there is no section of the State in which a committee of medical men cannot be found fully capable, and no doubt willing, to arrange these materials in such a form for presentation to the State Society as shall do credit to it as well as to themselves.

Among the more important subjects that occupied the attention of the Society at the session, the record of the transactions of which is before us, are a registration of births, marriages, and deaths, throughout the State; the expediency of establishing a pathological cabinet; the gratuitous vaccination of the poor in every county of the State; and the protective powers of vaccination.

The vital statistics to be derived from a careful and continuous registration of the births, marriages, and deaths, which occur in the midst of any community, are essential not merely to settle questions relating to population, but to determine, by positive data, the proportion of the natural increase and mortality in different localities, and among the different classes of the community, with the view of ascertaining their comparative salubrity, the causes of any discrepancy in this respect, which may be found to exist between them, and the means by which such discrepancy may be obviated. By vital statistics, alone, can be determined the value of life in the different sections of a country, and in the different ages, occupations, and modes of living of its population; and they can alone lead us to the discovery of the measures necessary to equalize and augment the value of life in all. These are among the leading benefits to be anticipated from an accurate system of registration, and we are pleased to find the medical profession in Pennsylvania alive to the importance of this measure, and zealously engaged in obtaining the passage of a law by the Legislature of the State to carry it into effect.

Although there are some defects in the bill relative to registration passed at the last session of the Pennsylvania Legislature, and printed as an appendix to the present volume, still it is to be regretted that the Governor should not have seen proper to give it his approval. A registration being once established, there would be little difficulty in obtaining the amendments necessary to secure a more simple and efficient system.

In withholding his name from the bill alluded to, the Governor merely exercises a power secured to him by the constitution; we have no right, therefore, to complain, but it is to be hoped that the reasons he shall furnish to the legislature, at its ensuing session, will be of a character fully sufficient to warrant the jeoparding of so important a measure.

The report of the committee on a pathological cabinet deserves the serious consideration of all the constituents of the State Society. Valuable specimens of morbid anatomy may be collected by every physician in general practice; but this is seldom done, few physicians out of our large cities having the leisure properly to prepare them for examination and preservation, or the conveniences for keeping them for future reference. A few isolated specimens, also, are but of little value to the pathological student, compared to an extensive and well-arranged cabinet. The liberal proposition made by the College of Physicians, if acted upon by the physicians of Pennsylvania, would, in a few years, place within their reach a cabinet in which all the leading forms of morbid structure could be studied with profit.

The gratuitous vaccination of the poor throughout the commonwealth is a measure in which every citizen is deeply interested. Even if the protection of the indigent classes from the suffering, the mortality, or the deformity, incident to small-pox, and the saving of the loss entailed upon the community by the death or decrepitude of vast numbers of its labouring population, and the expense incurred for their support when sick or disabled, would seem to be sufficient considerations to insure the measure being carried into effect; but when we consider that, with a large portion of the population liable, upon the occurrence of an epidemic of small-pox or its accidental introduction by an infected person or clothing, to be attacked with that disease in its worst form, even many of those who, under ordinary circumstances, are fully protected by vaccination, are in danger of suffering, to a certain extent, from exposure to an air thus saturated with the poisonous miasm given off from the bodies of the sick, while their offspring, unless they could be conveniently and effectually vaccinated at the moment of birth, are liable to fall victims to the prevailing disease.

We are glad that the State Society has taken this subject in hand, and can entertain no fear that their appeal to the legislature in reference to it will be ineffectual.

The novel and startling facts and propositions, announced by Dr. Gregory of London, in relation to vaccine, small-pox, revaccination, and inoculation, and referred to in the report of Dr. Jackson made to this session of the State Society, are well deserving of a close investigation. If it be true that inoculation in persons over fifteen years of age, who had been previously vaccinated, produces a new form of papular disease, which is not contagious, is unattended with danger, and gives protection against small-pox for life, we have a discovery equal, if not superior, in importance to that of Jenner. If the correctness of this statement shall be established by a careful series of experiments, we shall have then a means of protection against small-pox more uniformly certain than vaccination, and disarmed of all the danger attendant upon variolous inoculation.

The State Society has very properly appointed a committee to investigate the accuracy of these conclusions of Dr. Gregory, in which he is said to be sustained by M. Cazenave, the celebrated dermatologist of Paris. It is to be hoped that the committee will not neglect the task confided to them; the means for its accomplishment are within their reach, and the medical profession throughout the State will look with anxious expectation for their report. D. F. C.

ART. XVI.—*History of Medical Education and Institutions in the United States, from the first Settlement of the British Colonies to the year* 1850; *with a chapter on the Present Condition and Wants of the Profession, and the Means necessary for supplying these Wants, and elevating the Character, and extending the Usefulness of the Whole Profession.* By N. S. DAVIS, M. D., Professor of Principles and Practice of Medicine in Rush Medical College, etc. etc. Chicago, 1851: 12mo. pp. 228.

IN undertaking the office of historian of medical education and medical institutions in the United States, Dr. Davis has, evidently, been prompted by the best of motives. Unfortunately, however, he has mistaken his vocation. We admire the love he has evinced for his profession, and give him credit for the efforts he has made to elevate its character and extend its usefulness, by directing due attention to the moral character and proper education of those who would enrol themselves among its members. Of his honesty of purpose, no one has a right to doubt; and of his untiring zeal in the cause of professional reform we have all been witnesses. Still we must withhold from him our meed of praise when he claims it as the delineator of the domestic history of the medical profession; the means it has provided in this country for the instruction of its novitiates; and the institutions it has there organized, where its mission of good may be displayed, and its members made familiar with disease and the application of the means for its prevention and its cure.

There can be no doubt that a careful review of the condition of the medical profession and of medical education in these United States, from their first settlement to the present period, would be both interesting and instructive. In such a review, attention should be paid to the character and professional standing of the physicians with which the country was supplied during the several periods of its colonial history, as well as subsequently to its organization as an independent nation; and an inquiry should be instituted into the influence which, previously to the establishment of regular medical schools, and for some time after, the leading physicians exercised, as private instructors, upon the character and condition of our profession on this side of the Atlantic. Pains should also be taken to trace the opportunities that were successively afforded for medical education; these at first, it is true, will be found to have been but few, casual, and imperfect, but augmenting in number, permanence, and importance, as the population increased, and medical services became more in demand, and were better compensated. By a candid examination of the state of medical education in this country, compared with the condition and wants of the people, we shall not find so much cause of complaint in regard to the actual neglect of professional instruction, and the ignorance and deficiency of skill in the medical men, during the period of our colonial subjection or in the early days of our independent existence. The fault has not been that the means for medical instruction adapted to the existing condition of the people, and in accordance with the former restricted character of medical science, were not afforded in this country at a sufficiently early period; but, on the one hand, that the means for professional education have not kept pace with the progress of our science and the rapid development that has been given to every department of human knowledge calculated to lead us to a knowledge of the etiology, the pathology, the prevention, and the cure of disease; and, on the other, that due care has not been taken to demand from all who would assume the duties and responsibilities of a practitioner of medicine, adequate moral and educational qualifications.

In the work before us, Dr. Davis professes to have embodied "all the facts in regard to the educational history of the medical profession in this country; and by a careful tracing of present evils and defects to their origin," to have furnished that information without which "no member of the profession can be prepared to act wisely his part in the great progressive movements of the age." He has unquestionably brought together much useful information in reference to the history of our profession, in this country, during former years, not certainly all that he might have collected by a little more research; nor has he always presented what he has collected with all the fullness and precision which are desirable. Nor has he always made the best use of his materials, by so arranging them as to present a broad and comprehensive view of the condition of the medical profession of our country, at different periods from its earliest settlement to the present.

Many of the important contributions to medical knowledge and literature, for which we are indebted to our older physicians, are correctly indicated in the present work; others, however, of equal value are left unnoticed. Dr. Davis evinces no great familiarity with the early history of American medical literature, having recorded as an entire blank a period during which many works of distinguished merit were produced, the greater portion of which are still received as authorities in reference to the particular subjects of which they treat.

In the closing chapter, are presented many important truths connected with the present condition and wants of the profession: truths which strongly press themselves upon our attention. We cannot shut our eyes to the fact that for a series of years the medical profession throughout our country has been rapidly deteriorating; that the qualifications of a majority of those admitted into its ranks are manifestly deficient; and that, in consequence, it has lost that high rank in public estimation which it is essential it should maintain to enable its members to fulfil successfully their important and responsible duties. It is unquestionably true that physicians have entailed much of the evil, under which they labour, upon themselves. And it will continue to be felt so long as private teachers will receive into their office, as medical pupils, individuals deficient in sufficient mental capacity, preliminary education, and moral fitness to acquire a proper knowledge of the healing art, or to practice it with honor to themselves and benefit to their patients.

While there exists, in almost every State, a facility for the rapid multiplication of schools, with irresponsible faculties; and while the office of medical teacher is permitted to be assumed merely as a source of income by those who are unwilling to abide the slow acquisition of professional employment and its legitimate emoluments, it is impossible to expect that medical teaching will not be prostituted for the sake of gain, and that imperfectly educated and incompetent persons will not be graduated as physicians, to crowd the profession, lower it in the esteem of the public, and discourage from entering into its ranks such as can alone confer credit upon it by a conscientious and efficient discharge of its duties. What is the best remedy for these evils, we are not prepared to decide. Perhaps the one proposed by Dr. Davis might succeed, could it be carried into full effect. But until the members of the profession generally shall be brought to see that their true interests will be best promoted by excluding from among them all such as are not properly qualified to assume the duties and responsibilities of physicians; until they shall become united among themselves, and prepared to decide for themselves, without reference to the pecuniary interests or selfish rivalship of medical schools, what shall be the qualifications of those whom they are alone willing to recognize as regular practitioners of medicine, we fear the evil will rather increase than diminish. Even though a law were passed by every State separating the right of teaching from that of licensing to practice, and conferring the latter upon an independent board of examiners, the evil could not be remedied, but incompetent persons would still be admitted to disgrace the medical profession.

Fifteen years ago an excellent law was passed by the legislature of this State—the same law which Dr. Davis erroneously states was rejected by that body—which, had it been fully carried out by those who were its original projectors, might have been made the basis of an important reform in medical teaching; by giving to the student all the advantages to be derived from the instructions of the best teachers in the different branches of medical science our country could supply; and of an essential reform in the mode of conferring the diploma, which should be the passport to practice, by making it the positive testimonial of their qualifications, as determined by an independent and disinterested board of examiners, responsible for their acts to the great body of the profession throughout Pennsylvania. But, unfortunately, the temptations of ease, power, and emolument, held forth by the professorial chairs of our medical schools, caused the zeal of most of the early friends of this law to cool; and it has, in consequence, remained, until now, a dead letter on the statute-book of the State. D. F. C.

ART. XVII.—*The Laws of Health, in relation to Mind and Body: A Series of Letters from an Old Practitioner to a Parent.* By LIONEL JOHN BEALE, M.R.C.S. Philadelphia: Blanchard and Lea. 12mo. pp. 295.

IN these letters will be found a very good summary of the laws of health; the importance of a knowledge of which to every individual who desires to enjoy to the uttermost, and to the latest possible period of human existence, the exercise of his physical and mental powers—to every one who would avoid the pangs of disease and premature decay, and preserve unimpaired the inestimable blessing of a sound mind in a healthy body—is enforced and illustrated in a manner well calculated to interest and instruct the popular reader.

It is unquestionably true, that "such books as the present cannot be too numerous, while the laws of health are so grievously disregarded," not only by parents, who, in the proper or improper training of their offspring "from birth, through childhood, and to the eve of man's estate," have it in their power to bestow upon them a life of sickness and imbecility, or one of health, with phy-

sical, and moral, and intellectual vigour, but by nearly all persons in reference to themselves. The mass of mankind act as though all that relates to their organic well-being were unworthy their consideration. Many, indeed, would seem to imagine that a good constitution is an accidental inheritance, that health and disease are the mere offspring of chance, and that man can no more secure the one or avoid the latter, by attention to diet and regimen, to action and rest, to the material and amount of clothing, to the condition of the air he breathes and to the due exercise of his moral and intellectual powers, than he can, "by taking thought, add one cubit to his stature."

"That the body and the mind may be so trained as to resist disease altogether would be too bold an assertion, but it is certainly true of a vast number of the diseases which afflict our race." The daily duties of the medical practitioner bring to his notice many lamentable cases, where a small degree of knowledge of the laws of health would have most certainly prevented serious evils. Even those disorders which come upon the community suddenly from some unknown change in the constitution of the atmosphere that we can neither detect nor prevent, are less liable to attack, or, when they do attack, are ordinarily less severe in those who are guided by the laws of health.

In every point of view a careful study of these laws is important to all. It is upon a correct knowledge of them alone that must be based all sanitary reforms of a public character, whether in the construction, heating, and ventilation of buildings, the drainage and cleansing of cities, the discipline of schools, the regulation of labour in factories, and in the location and management of cemeteries for the dead.

All the bearings of the laws of health may not perhaps be so fully pointed out in the present work, or so fully elucidated, that it shall supersede the necessity of a more voluminous and complete treatise on the subject; still it is one well calculated to extend a knowledge of those laws—a knowledge in which every one is interested, inasmuch as upon a "due observance of them the value of life depends." **D. F. C.**

ART. XVIII.—*The Outlines of General Pathology.* By M. L. LINTON, M. D., Professor of the Theory and Practice of Medicine in the Medical Department of the St. Louis University. St. Louis, 1851: 8vo. pp. 205.

WE have seldom met with a medical work of so little pretension as this of Dr. Linton possessing the same amount of solid merit, and capable of interesting and instructing the reader to an equal extent. So plain, so simple, and so consistent are the general principles of pathology it inculcates; so seemingly in accordance are they with what we know of the physiology of man, and with the leading facts deduced from clinical observation and pathological anatomy; that they cannot fail to receive a favourable reception on the part of the medical profession. Even though upon more close investigation all the positions assumed by the author should not be found tenable, and in the complex organism of man it should be shown that other elements of disease may be engendered than those he has enumerated, still, in the present condition of medical knowledge, the outlines of general pathology of Dr. Linton will bear a very favourable comparison with any of the systems which are now credited as authorities. They are more simple and consistent than most of these, and are certainly, upon the whole, more truthful than some even of the more popular. We speak of these outlines, of course, only so far as they profess to teach the leading doctrines of disease, explanatory of its nature, elements, causes, and effects. As a system of general pathology embracing all the facts bearing upon the subject that have been accumulated and verified by the observations of the entire profession, to which character, however, they make no pretension, they unquestionably fall very short of numerous well-known treatises. It is as a faithful exponent of the general laws by which these facts are to be interpreted, alone, that the outlines of Dr. Linton can claim any merit.

There is no doubt that, upon a close criticism of each of the positions assumed by the author, we should find cause to question the entire accuracy of some few of them. We had in fact marked one or two for comment, but when we had gone through the entire work we were so much gratified with it, as a whole, that we felt disinclined to present objections to any portion of it, especially to such as involved no point upon which a difference of opinion might not exist without affecting the correctness of the general doctrines inculcated.

We strongly recommend the work to the attention of our readers, no one of whom, we are convinced, will regret the time devoted to its attentive perusal.

D. F. C.

Art. XIX.—*Lectures on Eruptive Fevers, as now in the Course of Delivery at St. Thomas's Hospital, in London.* By George Gregory, M.D., Fellow of the Royal College of Physicians of London; Physician to the Small-pox and Vaccination Hospital at Highgate; Corresponding Member of the National Institute of Washington, etc. First American edition, with numerous additions and amendments by the author, comprising his latest views. With Notes and an Appendix, embodying the most recent opinions on Exanthematic Pathology; and also Statistical Tables and Coloured Plates. By H. D. Bulkley, M. D., Physician to the New York Hospital, Fellow of the New York College of Physicians and Surgeons, etc. etc. New York, 1851: S. S. and W. Wood. 8vo. pp. 376.

These lectures present a very full and able account of the pathology and therapeutical management of a class of diseases which, from the frequency of their occurrence, and the fearful mortality attendant upon several of them, particularly interest every physician. The high professional standing and extensive experience of Dr. Gregory give to his opinions a degree of authority which, in connection with the character of the subjects discussed, renders the volume before us a highly important addition to our medical literature. It is calculated certainly to exert a powerful influence upon medical opinion and practice, in reference to the febrile exanthemata; and from the general accuracy of the views advanced by the author, we are happy to say that this influence will be a favourable one. Although we cannot agree with him in his opinions as to the uncertain and temporary character of the protection afforded by vaccination against the occurrence of small-pox, still, with the exception of this and a few other points of minor importance, his pathological and therapeutical teachings are, in the main, sound and judicious, and correspond with the general observations and experience of American practitioners.

Dr. Gregory divides the acute febrile exanthema into those "bringing life into hazard"—small-pox, measles, scarlet fever, and erysipelas; and those "not bringing life into hazard—the lesser exanthema." These he divides into two sections: "1. Vesicular affections, of which there are four: Vaccina, varicella, herpes, and miliaria. 2. The simple efflorescences, not leading to fluid effusion, of which there are also four—namely, lichen, urticaria, roseola, and erythema." These twelve forms of eruptive fever constitute the subject of the present series of lectures.

After noticing the large proportion—amounting in England and Wales to one-ninth—of the entire annual mortality produced by small-pox, measles, scarlatina, and hooping-cough, Dr. G. remarks:—

"If the exanthemata are considered independent of the hooping-cough, considerable fluctuations will be perceived, the mortality by them falling sometimes as low as six per cent., at times rising to near thirteen; but a very important principle comes into play here, which serves to equalize the amount of epidemic mortality. This curious doctrine has long been surmised, but was never proved until the statistical inquiries of recent times showed its correctness. We may, for want of a better name, call it the law of vicarious mortality, by which is understood, that whenever one epidemic diminishes, another increases, so that the sum total of epidemic mortality remains on an average of years nearly the same."

This doctrine of vicarious mortality, which would appear to be fully borne out by the statistics adduced by Dr. G., as well as by those added by the American editor, and by other and more extended series that we have examined, is one which demands a close investigation, in order that its accuracy may be more fully tested, and its true bearing upon many interesting questions in vital statics clearly established.

Dr. G. doubts the commonly received opinion, that the specific fever of an exanthematous poison may occur without an eruption; he denominates it a "very questionable pathology, which he cannot undertake to advocate." That, during variolous, scarlatinous, and morbillous epidemics, many persons experience an attack of fever, and most of the general symptoms of the prevailing disease, without the occurrence of any eruption, is unquestionably true; but whether these persons can with propriety be said to have passed through small-pox, scarlatina, or measles, whichever may be the reigning malady—whether they are as fully protected from a future attack as those in whom the eruption occurs—is to us, however, very problematical.

Dr. G.'s opinion in regard to the pathological relationship of the different exanthemata is thus expressed: "In general, the distinctive characters of exanthematous eruptions are strongly marked, but difficulties in diagnosis do occur. Small-pox is sometimes mistaken for chicken-pox. Measles is not always readily distinguished from lichen.

"When the exanthemata first invaded the world, their identity was universally believed. Rhazes and Avicenna taught that small-pox and measles were the same disease. Even so late as 1640 this doctrine prevailed all over Europe. Measles and scarlatina continued to be confounded until about one hundred years ago; nor has the bias in favour of exanthematic identity which our ancestors displayed, altogether subsided. Dr. Thompson of Edinburgh laboured to prove that chicken-pox is identical with small-pox. Dr. Baron, Mr. Ceely, and others, who would be justly offended by the imputation of confounding scarlatina and measles, or measles with small-pox, contend, nevertheless, strenuously for the identity of small-pox and cow-pox.

"That the disorders termed exanthemata bear a certain pathological relation to each other cannot be denied; but this principle is not more applicable to small-pox and cow-pox than it is to small-pox and measles, to small-pox and chicken-pox, to measles and scarlet fever. The epoch of the diffusion of small-pox and measles gives a certain countenance to such a doctrine. The relationship may possibly consist in some modification of the elements which compose the morbid miasm, and may be analogous to that which subsists between the nitrous oxide, the nitrous acid, and the nitric acid. Such a relationship, however, if admitted, is very different from the absolute identity for which Dr. Thompson and Dr. Baron contend."

All the facts connected with the history of the various epidemics of the more important of the febrile exanthemata would seem to point out a very close relationship between them. Whether they are all mere modifications of one or two primary diseases, or whether their distinctive characteristics result from some change that takes place in the elements composing one common morbid miasm, is a question of no little interest, but at the same time, one that will probably ever remain unresolved. Even, however, admitting this close relationship, we are not prepared to admit their absolute identity. The diagnosis of scarlet fever, measles, and erysipelas, and of small-pox, vaccinia, and varicella is too decided, and their successive propagation with all their distinctive features too clearly established, to suppose them to be mere varieties of one and the same disease.

The third, fourth, and fifth lectures are devoted to the early history, phenomena, statistics, and management of small-pox. They present under each of these heads every important particular connected with the history of the disease from its first recorded appearance, with its symptomatology, pathology, and therapeutics.

Dr. G. evidently considers inoculation to be a more certain protective against the mortality of small-pox than vaccination; we should almost infer, from his arguments in defence of it, that he at the same time believes it to be nearly, if not equally, as safe in every point of view. We present his views on this subject, in his own words:—

"You will naturally wish to know what were the practical results of inoculation. I will tell you in a few words. Its influence in lessening the mortality of small-pox was something quite extraordinary, and scarcely credible. With ordinary precautions in the choice and preparation of subjects, not more than one in *five hundred* cases will terminate unfavourably. The ill success which attended the early inoculations, between the years 1722 and 1730, arose entirely from bad management, from the most culpable negligence in the choice of subjects, and an utter ignorance of all the principles by which the practice of inoculation should be governed. Had not the discovery of Jenner interfered to interrupt its extension and improvement, inoculation would have continued to this day, increasing daily in popularity. It cannot be doubted that improvements in medical science generally would have shed additional lustre on this practice.

"Since the introduction of vaccination, it has been the fashion to decry inoculation, and to impute to it mischief of which it was not guilty. The great objection made to inoculation, and that which recently induced Parliament to abolish it altogether under heavy penalties, was, that it disseminated the virus, and multiplied the foci of contagion. Dr. Watkinson and Dr. Schivenke, in 1777, and more recently Dr. Adams, broke the force of this argument, by pointing out how important a part epidemic influence plays in the diffusion of variola. Had they lived in our times, how strongly would they have fortified their arguments? We saw, in 1838, an epidemic small-pox raging in London, where inoculation had long been discontinued. The admissions into the Small-pox Hospital in that year exceeded those of 1781 and of 1796. Inoculation was abolished throughout England and Wales in 1840, and the act has been most rigidly enforced; yet, during the last two years, small-pox has visited every county of England.

"Sir Gilbert Blane has attempted to prove by statistics the evils of inoculation. He has shown that the proportion which the mortality by small-pox, in London, bore to the general mortality, increased, during the last century, from 78 to 94 per thousand; but many circumstances must receive attention before we are justified in drawing conclusions from this fact. The population increased prodigiously in the interval, more indeed than would suffice to explain the increased mortality by small-pox. But further, the general mortality diminished. Consequently, though the actual mortality by small-pox had remained stationary and uninfluenced by population, its ratio to the total mortality would appear to augment. Thirdly, Dr. Adams has shown that a correspondent increase took place in scarlet fever and hooping-cough, which are not communicable by inoculation. Lastly, a different mode of calculation would exhibit a very different result. The sophism consists in arranging your figures so as to include or exclude years of epidemic prevalence. If, for instance, we divide the last ninety years of the eighteenth century into three periods, we shall find that the recorded deaths by small-pox were as follows: 1711 to 1740 (when there was no inoculation), 65,383; 1741 to 1770 (when inoculation was coming into general use), 63,308; 1771 to 1800 (when inoculation was almost universal), the deaths were only 57,268; so that by this showing, inoculation diminished the mortality by 8115 lives.

"Statistics are very useful, and deservedly carry great weight with them; but they may be enlisted, with a little management, on both sides of an argument.

"One subject only remains for our consideration, and that is, the question whether any circumstances would still warrant us in recommending inoculation on scientific principles? Concurring most cordially in opinion that the practice of inoculation by *unqualified* persons ought to have been put down (not in 1840, but forty years before that) by stringent legislative enactments, I still remain of opinion that, under several circumstances, it is the duty of a medical man to recommend inoculation. These circumstances do not, indeed, often occur; but the legislature would hardly wish to control and fetter, even in a single case, the deliberate judgment of a physician, acting for the benefit of his patient. I will name to you four of these cases: 1. When a person has been found, from peculiarity of habit, unsusceptible of vaccination. 2. When new sources of vaccine lymph are introduced, and it becomes of importance to ascertain that the new virus is efficient. 3. When young persons (between the ages of ten and twenty), vaccinated in early life, are proceeding as cadets to India. 4. When small-pox unexpectedly breaks out in a country district, at a time when (even with the facilities of a penny post) vaccine virus is not to be obtained. Other cases equally strong might be put."

This special pleading in favour of the safety of inoculation will be very readily overturned by a careful analysis of the statistics exhibiting the comparative mortality produced by small-pox prior to the introduction of inoculation, during the period of its general practice, and subsequent to the introduction of vaccination, as collected by different writers of Europe and America. In the Appendix to the present edition, Dr. Bulkley has presented sufficient evidence to show the general inaccuracy of the author's conclusions. There is great truth and good sense in the following remarks of the editor:—

"However great may be our indebtedness to inoculation for the amount of life saved by it to mankind, and we freely acknowledge it to have been great, we cannot but feel that the practice can never be relieved from the objection of multiplying foci of contagion; and while we concede that its continued employment would doubtless have led to great improvement in the mode of conducting it, and to still more decided benefits from it, with probably diminished risk of communicating it beyond the individual operated upon, we cannot be too grateful for the substitution of another protective power, apparently equally efficacious in its results, and almost entirely free from the charge of the least danger, in itself, either to the individual or to those about him. At the same time, we fully agree with our author, that there are circumstances which would warrant its adoption in special cases, and with proper restrictions, and that those mentioned by him come under this head; and we could even add to the list. It is not denied that inoculation may be perfectly safe, so far as the individual on whom it is performed is concerned, and that it may be a valuable test of his protection from casual variola; but the fact that, however mild in itself, it may communicate the most malignant form of the disease to another, is one which renders it a dangerous agent, the use of which, independently of other reasons, should be restricted within narrow limits, and, indeed, prohibited altogether, from the risk unavoidably attendant upon its general employment."

The sixth lecture presents a most excellent and sufficiently full summary of the pathology and treatment of measles, while the two ensuing lectures are devoted to the consideration of scarlet fever. The description of the several forms under which the disease ordinarily presents itself, and of its usual sequelæ, is clear and accurate. In treating of the pathology of the disease, Dr. G. remarks that, while "no doubt exists that, in a very large proportion of cases, scarlet fever is the product of a specific miasm," still, "the question may well arise, whether any combination of circumstances can develop an eruption possessing the characters of scarlatina," and he admits that his testimony is in the affirmative.

"I have seen scarlet eruption," he adds, "in no respect different from that of ordinary miasmatic scarlatina, arising from exposure to cold and moisture, and I often see true scarlatinal eruptions occurring in the progress of the secondary fever of small-pox, without any grounds for believing that contagion had operated. It seems as if secondary fever can develop this eruption in the same way as it throws out erysipelas."

We are familiar with an eruption closely resembling that of scarlatina, occurring under the circumstances referred to by Dr. G., but believe it to be of a very different character from the latter. The persons in whom the eruption occurred could not with any propriety be said to be labouring under scarlet fever. Of the occurrence of true scarlatina independent of exposure to any specific poison emanating from the bodies of patients affected with the disease, there can be no doubt; that epidemical visitations of the fever may occur from some morbid condition in the atmosphere, is, we believe, very generally admitted; but in the absence of this epidemic influence, we have repeatedly observed sporadic cases of unquestionable scarlatina occur under circumstances where it was impossible that the patients could have been exposed to contagion either directly or through the medium of fomites.

On the subject of bloodletting in scarlet fever, Dr. G. makes the following judicious remarks:—

"Some physicians discourage all loss of blood in scarlatina, as being foreign to the genius of the disease. Others strongly advise it. Much will depend upon the character of the symptoms, the period of the disease, the condition of the patient; but I wish to impress upon you strongly, that scarlet fever not only admits of bloodletting, but often imperatively requires it, and that on general bleeding alone the safety of the patient often depends."

"While I thus advocate the necessity of bloodletting in certain cases, I freely acknowledge that it is inapplicable to others. You would not always do harm by the attempt (for it is one thing in scarlet fever to open a vein, and another to draw blood); but any such indiscriminate use of the remedy would expose you and the remedy to just reproach. The successful treatment of the disease by bleeding in one epidemic, at one season, and in one district, does not authorize the same procedure in another epidemic, a different season, or a different locality."

"Local bloodletting is well adapted to many cases of scarlet fever—to cases accompanied with great determination of blood to the throat—to cases attended with headache or threatening coma." "In the management of the several inflammatory sequelæ of scarlatina (otitis, ophthalmia, and pneumonia), leeches and cupping are quite indispensable.

"Leeches generally bleed profusely in scarlatina, from the excited state of the cutaneous circulation. Four leeches in scarlatina will often do as much as twelve in typhus. It becomes occasionally necessary to stop the bleeding, which lunar caustic will do effectually. This tendency of leech-bites is always to be kept in view, but especially in the scarlet fever of young children. The child's life might otherwise be sacrificed, and the measure itself brought unfairly into disrepute."

"I cannot doubt but that a large proportion of cases of scarlatinal dropsy arise from the neglect of measures which ought to have been adopted in an earlier stage of the disease. If a certain amount of bloodletting, a certain number of doses of calomel and jalap, a certain amount of rest and abstinence had been indicated, but neglected or withheld, then, when dropsy occurs, the deficiency must be made up. The same things must be done late, which ought to have been done early."

Erysipelas is the subject of the ninth lecture. This disease, though not properly an exanthem in the strict pathological meaning of the term, bears, however, in many of its features, so close an affinity with the febrile exanthemata, that it is most conveniently treated of in connection with them. Erysipelas is, properly speaking, inflammation of the skin, and very commonly also of the subjacent cellular texture. Very good reasons might be advanced, therefore, why it should be transferred to the phlegmasiæ; but, with our author, we consider this a subject "not worth wasting time about."

In considering the causes of erysipelas, and the manner in which it spreads, Dr. G. first adduces the facts which prove it to be an epidemic malady, and which satisfactorily, to his mind, show that its most important source is miasmatic; he then explains the reasons which induce him to believe that this miasm, when formed, is capable of propagating itself by contagious emanations, and, in conclusion, points how erysipelas originates from causes not of a specific nature, some internal and others external to the human frame.

After referring to facts bearing upon the epidemic and contagious character of the disease recorded by Sauvages, Baillie, Calmeil, Velpeau, Blache, and Chomel, and the list might have been extended to a much greater length, Dr. G. remarks:—

"A connection of more than twenty years with the Small-pox Hospital has given me abundant opportunities, not only of confirming the truth of these positions, but of showing that we may carry our views much further. I feel persuaded, 1st. That erysipelas may commence in a hospital without the suspicion of importation. 2. That being so generated, from bed to bed, it may spread by contagion. 3. That the miasm generating erysipelas is identical with that which, in lying-in hospitals, generates puerperal peritonitis, which, in foundling hospitals and workhouse nurseries, gives rise to pudendal gangrene and umbilical ulceration; which in army hospitals generates hospital gangrene; which in hospitals differently circumstanced, is found to occasion a malignant form of cynanche, both mucous and cellular, with otitis, glossitis, an asthenic form of laryngitis, and sometimes the most aggravated form of typhus gravior."

"The dependence of erysipelas on a miasm *sui generis* is no new doctrine. It has been stated, over and over again by individual writers, but it has never, I think, been urged by systematic authors with the importance which it merits; nor has the doctrine been received as one of the avowed axioms of pathology. Dr. Rollo, in a treatise entitled, '*A Short Account of a Morbid Poison acting on Sores*,' and published very early in this century, distinctly announces the principle, and illustrates the intimate connection between erysipelas and hospital gangrene."

The circumstances which lead to the generation of the miasm productive of erysipelas, which Dr. G. denominates "*ochletic miasm*"—from οχλος, a crowd, are, according to our author, 1st, and most important, overcrowding the wards of an hospital.

"But," he remarks, "it is not numbers alone which are to be considered; a ward might safely hold fifty cases of *simple* fracture, which would not with safety contain twenty cases of compound fracture. Something, therefore, depends on the nature of the disorder. All disorders which throw out diseased secretions are more apt to taint and vitiate the air than those where no such secreting process goes forward."

"Another element of great importance in determining the sources of ochletic miasm is the degree of attention bestowed on cleanliness. If the bed-linen, mattresses, palliases, sheets, and blankets be frequently changed, the floors well cleaned, and the walls frequently whitewashed; if the nurses be careful to carry away all foul secretions, and to purify the patient's body by abundance of soap and water; in short, if the internal regulations of the hospital be good, miasm would, I suppose, be rarely engendered, even though the wards were crowded."

"A fourth element must enter into the calculation, and that is a good supply of fresh air. This, by some, is considered all in all; but it is not so, and all the ventilation in the world, conducted on the most scientific principles, and superintended by Dr. Reid himself, would fail in preventing ochletic miasm, if feather-beds and bolsters, soaked in unhealthy discharges, are permitted to remain in the ward.

"Dr. Rollo has advanced a step further in the analysis of the sources of ochletic miasm, and maintains that the disposition to erysipelas and its co-relative diseases (puerperal peritonitis and hospital gangrene) depends partly on a peculiar but hitherto undetected condition of the atmosphere. He is led to this opinion by observing that erysipelas sometimes shows itself in the airiest, least crowded, and best regulated hospitals. Without stopping to inquire how much is due to this circumstance, we are fully warranted in saying that the state of the atmosphere must not be lost sight of in such an investigation. We know, on the authority of Dr. Lind, that in Batavia, and other localities notorious for malaria, hospital gangrene and erysipelas, and every sort of associated disorder, prevail with intensity at certain seasons."

The facts adduced by Dr. G. in proof of the spread of erysipelas by contagion bear no proportion to the vast amount of direct testimony that might be brought forward, from sources of unquestionable authority, in support as well of this position as that of the intimate correlation of erysipelas and puerperal fever. As we believe both positions to be well founded and of the highest importance in directing us to the prophylaxis of peritonitis in the puerperal female, we are gratified to find so popular and distinguished a writer as Dr. G. engaged in their advocacy. We have long maintained the contagious character of erysipelas and its intimate relation with child-bed fever, and have been considered as somewhat visionary in so doing; the evidence in support of the accuracy of these opinions is constantly augmenting, and every day attracting increased attention.

A very good summary of the treatment of erysipelas is given. Although we cannot agree with the author in his estimate of some of the remedies that have been recommended in the disease, yet, upon the whole, his therapeutical directions are judicious.

In the tenth and eleventh lectures, Dr. G. gives the history, phenomena, practice, pathology, and results of vaccination. Dr. G. denies *in toto* the opinion recently promulgated, and adopted very extensively by the physicians of Europe and America—the identity, namely, of cow-pox and variola. The objections he adduces to this opinion are of great weight, and his conclusions would appear to be correct: namely, that

"Small-pox and cow-pox are antagonist affections—that cow-pox, instead of being, as Dr. Baron maintains, of a variolous, is, in fact, of an *anti-variolous* nature—that it alters and modifies the human constitution so as to render some individuals wholly, others partially, and for a time, unsusceptible of small-pox. Cow-pox and small-pox may be viewed as opposing powers, striving to gain the mastery of the human frame, and each, under different circumstances, and at different times, proving successful. The conclusion to which M. Bousquet (*Traité de la Vaccine*, p. 16) has come to, appears to me to be the just one. 'La vaccine,' says this acute writer, 'et la variole ne sont pas la même chose. Mais si elles différent dans leur origine, dans leur principe, elles se suppléent merveilleusement dans leurs effets. Il n'y a pas entre elles identité de nature, mais il y a reciprocité d'action.' To my mind, nothing can be more satisfactory than such a conclusion."

We cannot see in what manner our confidence in its protective powers can in any degree be strengthened by supposing that the cow-pox is identical with small-pox, or how it is possible, as asserted by one writer, "that a conviction of the non-identity of the two diseases would go far to shake *in toto* our belief in the real efficacy of vaccination." Our confidence in the efficacy of vaccination is founded solely upon the well-established fact that the great majority of those who have been placed fully under its influence resist the infection of small-pox under every degree of exposure. A knowledge of the true nature of the vaccine disease would be interesting, perhaps useful; but it can neither strengthen nor overturn the fact just referred to.

Dr. G. believes that the protection against small-pox afforded by vaccination diminishes or wears entirely out in a few years.

"It is a matter of general notoriety," he remarks, "that small-pox is very seldom taken by vaccinated children who are under the age of eight years. In the course of a long experience at the Small-pox Hospital, I have never seen more than three or four instances of such an occurrence. The protective power of cow-pox may, therefore, for all practical purposes, be considered as *complete* for that period; but we are compelled to confess that later in life it diminishes in a certain proportion of cases. What the exact proportion of cases is, never has been ascertained, and, for very obvious reasons, never can be known or even guessed at.

"But although this be impossible, there seems no reason why we should not attempt to ascertain the laws which affect and limit that power of resistance to the variolous virus which cow-pox displays in so many instances, and so remarkably in infantile life. I have mentioned puberty as a disturbing cause. I have no doubt that others exist, of equal, perhaps of superior efficacy. Among them may be mentioned change of climate, which appears to have a very marked influence, sufficient to induce us to recommend the re-vaccination of all young people going to or returning from India. A severe fever, in like manner, may so alter and modify the general mass of fluids as to open a door to the reception of the variolous effluvium. Importance should be attached also to the epidemic constitution of the season. It is certain that persons who under common circumstances have, through the agency of the cow-pox, resisted the variolous miasm, succumb to it under epidemic visitation."

"The preceding tables"—tables given in a former part of this lecture, but which we have not considered necessary to copy—"while they certainly countenance the notion of diminished vaccine energy, through the medium of those changes which time effects in the frame, prove, at the same time, most incontestably, that a portion of virtue still clings about the system, sufficient to preserve life, though not to exhaust susceptibility. To determine with accuracy the average ratio of mortality which obtains when small-pox invades those who have been well vaccinated, is a point which the statistical records of the last twenty years teach us with considerable precision. You will remember that small-pox in former times (and among the unprotected in recent times) proved fatal at the rate of twenty-five, or from that to thirty-three per cent. (one out of four, or one out of three.)

"*Table showing the Rate of Mortality by Small-pox after Vaccination at Different Periods and in Different Parts of the World.*

Locality.		Number of cases.	Deaths.	Rate of mortality per cent.
Small-pox Hospital, London,	1826 to 1832	619	40	7
"	1833 to 1839	900	60	7
"	1840 to 1846	1011	64	6½
Total at "	1826 to 1846	2530	164	7
British army	1834 to 1838	1025	122	12
Copenhagen	1824 to 1835	3093	66	2
Wirtemberg	1831 to 1836	1055	75	7
Vienna	1834	200	16	8
Ceylon, Epidemic of	1830	260	34	13
"	1833 to 1834	341	23	7
	Total	8504	500	6

"The above table, compiled from various sources, will show how great is the diminution in the ordinary rate of mortality by small-pox, when vaccination has preceded. It will be seen that the average rate is then six per cent., the maximum being thirteen, and the minimum two.

"The result of these statistical investigations may be stated to you in a few words. Small-pox in the unvaccinated is five times more fatal than it is to those who have previously undergone vaccination. The following table, carefully drawn up from the records of the Small-pox Hospital for the year 1841, shows you how this is effected. It is an analysis of the several cases admitted in that year, having small-pox after vaccination. It will be seen that nearly two-thirds of the cases (or sixty per cent.) received the disease in a modified form. The remainder (forty per cent.) received it in a normal form, but in variable degrees of intensity, the mortality among *them* following the ordinary law.

"*Analysis of one hundred and fifty-one cases of Small-pox succeeding Vaccination, which occurred at the Small-pox Hospital in* 1841.

			Admissions.	Deaths.
Normal	56	Confluent	25	8
		Semi-confluent	19	0
		Distinct, regular	12	1
Abnormal or modified	95	Confluent, modified	18	0
		Semi-confluent, modified	19	1
		Varicelloid, or distinct modified	58	0
		Total	151	10

"Deducting the two deaths among the milder cases, which were the result of superadded disease, there remain eight deaths. Now, supposing that these 151 persons had never been vaccinated, the mortality would have been at least five times eight, or forty, and might, under unfavourable circumstances, have reached fifty. Such appears to be the actual amount of the protection which vaccination affords, and with it, such as it is, we must, I believe, rest satisfied. My firm persuasion is, that no additional precautions on the part of vaccinators, and no alterations in the kind of lymph employed, will have the slightest effect on the general results."

The number of the vaccinated who are liable to an attack of small-pox, in either its normal or modified form, will depend very much upon the greater or less care that has been taken to place the systems of all subjected to the operation fully under the vaccine influence. That all who are reputed to have been *successfully* vaccinated, are not thus completely infected, there cannot be a doubt. Independently of gross ignorance and carelessness on the part of vaccinators, there are many circumstances that may occur to interfere with the regular progress of the vaccine vesicle, and to prevent the system from being brought perfectly under the protective influence of the vaccine infection, that cannot always be anticipated and guarded against; consequently, there will be in every community, even in those where vaccination is most extensively and carefully practiced, many who are but partially protected against small-pox, from the imperfect manner in which they have undergone that process, while others are placed in the same predicament from the possession of some constitutional peculiarity, in consequence of which their systems cannot by a single, nor often even by repeated vaccination, be brought entirely under the influence of the vaccine influence. Now, we have no other test that an individual is fully protected by vaccination than the repetition of the operation after some interval of time; and, at the same time, by this re-vaccination, we remedy, in most cases, the imperfect infection produced by the previous operation.

It is true Dr. Gregory would appear to be rather opposed than favourable to re-vaccination; nevertheless, the weight of testimony is decidedly in favour of the operation. The physicians of this city, who were at first adverse to re-vaccination, have become convinced, from personal experience, of its value, and now, very generally, practice and advocate it. A respectable array of evidence in favour of this measure, derived from the experience of the physicians and institutions of Europe, where re-vaccination has been practiced on a large scale, and in a manner well calculated to test its results, is given, in the Appendix to the present edition, by Dr. Bulkley.

Of the two remaining lectures, the thirteenth and fourteenth, the one is devoted to the consideration of the vesicular eruptions, and the other to a short notice of the non-contagious efflorescences. This portion of the work may be consulted with profit by the student. The information in respect to the pathology of the diseases comprised under the two general heads, though concise, is clear and accurate, and the directions for their management plain and judicious.

The Notes and Appendix of the American editor form an interesting addition to the text of Dr. Gregory. They enhance materially the value of the present edition of his lectures. D. F. C.

ART. XX.—*Elements of General and Pathological Anatomy, presenting a View of the Present State of Knowledge in these Branches of Science.* By DAVID CRAIGIE, M.D., F.R.S.E., etc. etc. Second edition, enlarged, revised, and improved. Philadelphia: Lindsay and Blakiston, 1851. 8vo. pp. 1072.

THE treatise of Dr. Craigie, though less full, perhaps, in some particulars than could be desired, and especially in reference to the morbid changes detected by the microscope, to which, within a recent period, so much attention has been paid by the physicians of continental Europe, is nevertheless one of the best compendiums of the elements of general and pathological anatomy we possess. By availing himself of the most reliable sources for his materials; by comparing and generalizing, with fidelity, the results arrived at by those who have investigated with the greatest care the leading subjects embraced in the general plan of the work; and by arranging, in a connected and systematic form, those deductions and inferences that are justified by an accurate analytic collation of the best authenticated facts, Dr. Craigie has succeeded in placing within the reach of the student a volume well calculated to furnish him with correct statements and useful information on the nature and distinctive characters of diseases, as revealed to us by pathological anatomy.

In preparing the present edition, all the materials of the first have been employed. But they have been greatly increased by the introduction of new matter under the proper heads, in order to carry forward to the present time the information acquired since the appearance of the first edition. Numerous rectifications, both in healthy and morbid anatomy, have also been made.

Besides the changes now mentioned, two new books have been added: one on the structure and morbid states of the glands; the other on the structure and morbid states of the lungs and heart.

There is but one department of pathological anatomy not embraced in the present volume, and that is local diseases, and those varieties of malformation which consist in misapplications of the component parts of organs. In noticing this omission, the author, in his preface, remarks, that these subjects, it is almost superfluous to say, cannot, without a violation of the principles of arrangement, be introduced in a work on general anatomy; on this account, however reluctantly, he has been obliged to exclude them almost entirely, unless so far as their general characters could be stated. D. F. C.

Art. XXI.—*The Microscopist: or a Complete Manual on the Use of the Microscope: for Physicians, Students, and all Lovers of Natural Science.* With illustrations. By Joseph H. Wythes, M. D. Philadelphia: Lindsay and Blakiston, 1851.

This is the title of a handsome little book, of 182 pages 12mo., which is neatly printed, and is illustrated with many well-executed wood-cuts.

As this is the first American work upon a subject which is now exciting considerable attention, it will probably be extensively circulated and read. We regret that it is not better calculated to advance the knowledge of the microscope, and its relations to natural and medical science. A "*complete* manual" on this subject would be a valuable acquisition to the American student of medicine and of general science; but every one who purchases this book with the expectation of becoming thoroughly acquainted with the instrument, either practically or theoretically, will be exceedingly disappointed.

A student possessed of a microscope can learn nothing of its plan of construction or its manipulation unless it happens to be of the same form and manufacture as that figured on the frontispiece.

The table of contents is sufficiently full. It contains, Chapter I. History and importance of the microscope. II. The microscope. III. Adjuncts to the microscope. IV. How to use the microscope. V. On mounting and preserving objects for examination. VI. On procuring objects for the microscope. VII. Test objects. VIII. On dissecting objects for the microscope. IX. The cell-doctrine of physiology. X. Examination of morbid structures, &c. XI. On minute injections. XII. Examination of urinary deposits. XIII. On polarized light. XIV. Miscellaneous hints to microscopists. But the amount of information upon each of these subjects is so extremely limited that the book will be found entirely unsatisfactory to all but those who are content with a superficial knowledge of the subject.

What is said concerning the history of the microscope, its adjuncts, and their uses—the procuring, preparing, and mounting objects—is taken principally from Queckett's work, to which all those interested in the microscope had better directly refer for information. The chapters on the cell-doctrine, morbid products, and urinary deposits, subjects particularly interesting to the physician, are extremely meagre; of course they cannot be otherwise in a work of this size. They would fail to instruct a student who was entirely ignorant of the subject; and a properly educated physician would merely be reminded of textbooks and well-known treatises of the present day.

Since, therefore, it contains nothing new concerning either the philosophical, mechanical, or practical bearings of the microscope, and certainly nothing original in minute anatomy, physiology, or pathology; and since it contains so little of that valuable information which is already published in works quite accessible, we are at a loss to conceive of any benefit which will be conferred by its publication. J. N.

ART. XXII.—*The Philosophy of Vital Motion.* By CHARLES BLAND RADCLIFFE, M. B., Licentiate of the Royal College of Physicians; Lecturer on Vegetable Physiology and Botany at the Westminster Hospital, etc. etc. London, 1851. 8vo. pp. 158.

WE believe that we shall best communicate to our readers an idea of the kind of philosophy taught in the volume of Mr. Radcliffe, by presenting to them the author's preface, which is as follows:—

"In a work lately published under the title of '*Proteus, or the Law of Nature,* I have endeavoured to realize that unity, or τὸ ἕν, which is said to ensoul the diversities of things, and bind them together in one. I have traced this principle in plant and animal, not merely as a vague generality, but as pervading the entire structure—from a simple organ to a perfect organism, and from the complicated nervous, vascular, or osseous systems, to the more rudimentary parts of the economy. I have traced, also, the same principle into inorganic bodies; so that, in relation to form, we may conclude that there is one archetypal law in all created things, whether animate or inanimate. Heat, light, chemical affinity, electricity, motion, and other physical agencies, have also been found to be connected with each other, and with the more recondite vital influences, as correlative aspects of one central force; so that the unity of creation is reflected in force as well as form. And finally, this principle has seemed to be absolute, for on proceeding onwards it is seen to be impossible to separate form from force, and to regard the one as a mere lifeless image, or the other as a mere 'naked essence.'

"But it may be objected that all these ideas are mere philosophical abstractions, and that this unity of nature is not a practical truth to be realized in the problems of everyday physiology. If there be this oneness of which you speak, it may be asked, how is it that the body is obedient to a law which is totally different to anything we find in inorganic nature? Will it explain the hitherto inexplicable capillary movements of the blood? Will it solve the oft-perplexed, and still unread riddle of muscular action? Will it tell us why the heart continues its mysterious beatings? Will it give the clue to a hundred acts and movements which are distinctive of life, and which we are obliged to refer to an incomprehensible and potent essence which is shut up in every living body? for, except it will help to do these things, the doctrine is of no practical value. An objection like this is just and right, for no one can be expected to receive an opinion which is based merely on transcendental facts and arguments, especially when it is belied (or seems to be) by his own daily experience.

"Let us encounter, then, this objection on the grounds that are here indicated, and inquire whether the *phenomena of vital motion* will not receive light and interpretation from the doctrine they seem to contradict. Remembering the arguments for a common law, let us not seek the explanation in the body alone in which the movements are manifested, but in a wider range of causes. Let us treat unity as reality and not as a fiction, and wait patiently for the result. If we do this, every phenomenon will be found to point to this truth; and this truth, on the other hand, by enlarging our ideas to receive the comprehensiveness of nature, will enable us to advance far towards the explanation of vital motion. If we do this, the movements of blood or other nutrient fluids in vessels independently of any cardiac impulse, the action of muscle, the beating of the heart, and many other mysteries of life, will no longer perplex us, for each will interpret the other; and all will refer to a common law—cosmical—one."

If we understand our author correctly, and we are not so sure that we do, for his language is often anything but clear and explicit, nor are we very certain that he has himself always a very definite conception of the idea he desires to convey in many of the loose and mystical sentences with which the work abounds;—if, however, we have not mistaken his meaning, he refers the vital movements of the living organism to "the several forces of ordinary matter, namely, heat, chemical affinity, electricity, and the rest," and that even what may be termed the vital and peculiar principles, are either mere modifications of these several forces, or else the motors of them.

He urges his readers to "banish the notion that the causes of vital movement *must*, of necessity, be different from those which determine motion in inanimate bodies."

In regard to the development of the primary germs or nuclei of the organic fluids, he remarks, "We may argue that expansion is inevitable under the operation of heat, and thus it is possible to conceive that the enlargement of growth may be no mysterious property, but only the natural result of the operation of heat upon the substance. Even the formation of the cavity, by which the originally solid nucleus is converted into a hollow vesicle, may also be a part of the same process, for under the operation of an expansile force the particles of these minute fabrics will tend outwards from the centre."

"The force connected with the process of respiration must," according to Mr. Radcliffe, "be considered, in great part at least, as physical and mechanical in its character—for it is difficult to attach the idea of vitality to a change so closely allied to combustion and putrefactive disorganization: and the more so, as the effects upon the capillaries may be explained by this means. The dilated condition of the vessels, when the function of respiration is vigorous, may be regarded indeed as the natural consequence of the free extrication of heat, which must take place under these circumstances, and the shrunk and contracted condition when the process flags, as an equally necessary consequence of the diminished supply of the same agent."

In relation to muscular motion, upon which Mr. Radcliffe entertains many very peculiar and heterodox opinions, he remarks, in concluding his examination of the subject:—

"We have reviewed the phenomena of voluntary muscular action in relation to the several correlated aspects of physical force, and from this examination it appears that the muscles are subject to each and all of these agents, as inorganic bodies are subject. Heat, light, electricity, and chemical agency are all correlative of motion, and this latter aspect of force, so far as we may judge, is not different from the motion which is correlative of these forces in inanimate nature."

The following quotation will exhibit the opinion of our author in respect to the nature of nervous influence:—

"The physical mode in which the nervous influence affects the capillary vessels, for there is such a tangible mode of action, may be ascertained without any difficulty. When, for instance, the mind is paralyzed by fear, the skin becomes pale and blanched, in consequence of the shrinking of its vessels; and not only so, but if the bodily frame be fragile and delicate, the deadening influence extends to the heart, and a state of syncope or entire suspension of circulation is the result: when, on the other hand, the frame thrills under the excitement of joy, and the nervous power is exuberant, the countenance becomes radiant, the skin is suffused with blood, and the heart beats with increased vigour. These phenomena afford a twofold illustration of the importance of the nervous principle as an 'agent of life,' and the nature of the agency physically considered.

"As evidenced in the capillary vessels, therefore, the effects of an exuberant or deficient supply of nervous influence are identical with those which attend the communication or withdrawal of that physical agent (heat) with which we have been already occupied—so identical, indeed, that we naturally inquire whether the higher and mystical force does not operate through, and by means of, this ordinary agent. Independently of any unintelligible theories on the subject, it would appear that the peculiar nature of the nervous system, and the relation which this system holds to the rest of the organism, would authorize such a conjecture. The composition is of cells and fibres, constructed upon a common type, and moulded from a common plasm, with the other parts of the body; and structurally, therefore, there is no sufficient reason to suppose speciality of attributes. Nerve and ganglion, also, dissolve away under the ordinary destructive agencies which act upon the body, and change into new chemical compounds, identical in nature and history with the compounds which result from the disintegration of the rest of the organism. Viewing the question, therefore, in connection with genesis, as in the act of nutrition elsewhere, a certain amount of ordinary physical force must attend the formation of nervous matter: and viewing it in connection with destruction or disintegration, or, in other words, in relation to the respiratory function, the chemical affinity, which is here in active play, is but another name for the same force. A proportionate destruction of tissue is also involved in the development of nervous influence; and in this respect, as in other varieties of force, the nervous influence may be regarded as the exponent of a certain condition of change in matter.

"For these reasons it must be admitted that ordinary physical agencies constitute a part, at least, of nervous power; nay, more, that the degree of the one is commensurate with that of the others. It is impossible, moreover, to conceive the idea of ordinary force being present and inoperative; and it can scarcely be imagined that the nervous power which is superadded to the more commonplace agents should have a different law of action; otherwise, the one might negative the other. Whatever difference of essence, reason and experience argue a community of operation; for, so far as the capillary vessels are concerned, the effects of an insufficient or excessive supply of nervous influence are similar to those which attend equivalent alterations in the intensity of ordinary force. Such, indeed, are the facts already cited in connection with the history of fear and joy as to allow it to be supposed that the nerves act upon the capillaries, not by the sur-addition of any new agency, but by means of that which is already in operation—by that, namely, which is the necessary exponent of the molecular changes in the material part of the nervous substance."

The physiological facts and considerations, remarks Mr. R., are of such a character as to allow us to suppose an intimate relation between the nervous influence, physically considered, and the ordinary force of matter—a relation

"So intimate, indeed, that the former may be regarded as a mere modification of the latter, not essential to the functions of vegetables, or of the lowest tribes of animate existence, but superadded in order to intensify the vitality of higher and more favoured creatures."

In order that our readers may be in possession of our author's entire doctrine, as set forth in the volume before us, of the nature of the nervous influence as an agent in vital movement, it is necessary to add to the preceding quotation the following, from the fifth chapter:—

"In the preceding chapter, it has been found that nervous influence and the other forces of organization agree in their mode of action, and that all these vital and physico-vital agencies co-operate harmoniously with the several varieties of extra-organic force—and hence we may infer, with very sufficient reason, that nervous influence is nothing more than a modification of cosmical force.

"In another work, it has been shown that the nervous system is formed upon the same archetypal plan as the other parts of the body, and even of the body itself, and that the same plan is extended to what are called inanimate bodies; and in this unity of the material framework of things there is another reason for supposing the nervous influence to be a variety of cosmical force. It has been shown, also, in the same work, that all forms of physical and vital force are truly correlative: and hence a final argument in favour of the view that the nervous influence is a variety of cosmical force.

"We are not taught, however, by these considerations to do away with the idea of nervous influence, though we regard it in this point of view, or to ascribe its workings to electricity, or heat, or light, any more than we should confound the existence of light, or heat, or electricity, and say that either of these agents was identical with the others. Correlation, in fact, involves the idea of unity, but it as distinctly retains that of difference. Nor are we to confound nervous influence with mind, for—if it be as we have said—it is clear that it can have no exclusive claim to be considered as identical with this essence.

"The nervous influence, therefore, is to be regarded as one of several modes of cosmical force, which reacts harmoniously with all companion agencies in the determination of vital movement."

The concluding chapter treats of "the action of mind in vital movement." Of this portion of the author's treatise we can furnish our readers no account

We candidly confess that we have been unable to catch the author's meaning. His language is throughout mystical and indefinite; his arguments, so far as we can understand them, vague and inconclusive; many of his illustrations are irrelevant; while others, as for example his evidence of the conscious state of the mind after death drawn from the imagery of the parable of the rich man and Lazarus, are exquisitely ridiculous.

The work of Mr. Radcliffe, though it unquestionably embodies many important truths, is certainly but ill adapted to advance materially our knowledge of the philosophy of vital motion. D. F. C.

Art. XXIII.—*Observations on the Diseases of the Rectum.* By T. B. Curling, F. R. S., Surgeon to, and Lecturer on Surgery at, the London Hospital, etc. London, 1851.

Mr. Curling is already favourably known to the profession by his "Essay on Tetanus," and by his more recent treatise on the "Diseases of the Testis." The volume of which we have given the title above is a very unpretending one of 123 pages octavo. The author does not profess to present a complete treatise on the diseases of the rectum, but rather "to offer such views of pathology as may lead to judicious practice." After a careful perusal of the book, we cannot see that Mr. Curling has presented therein any important novelty; but we can bear cheerful testimony to the soundness of his pathological views and to the judicious practice which he advocates.

The diseases of the rectum of which he treats are, in special chapters, Irritable Ulcer, Spasm of the Sphincter Muscle, Hemorrhoids, Prolapsus, Polypus, Fistula in Ano, Chronic Ulceration, Stricture, Cancer, Feces impacted in the Rectum, and Anal Tumours and Excrescences. These are preceded by some general observations on the peculiarities which attach to the affections of this part of the body and to the operations for their relief.

In order to form a correct diagnosis of most of these complaints, the use of *a speculum* is essential. Mr. Curling, having found the instruments in common use more or less defective, has had made "a plated speculum of a conical form, so as readily to penetrate the sphincter, with a side opening of sufficient width and carried to the blind extremity of the instrument; and instead also of a movable piece, an ebony plug is substituted, having a plate which fits close into the aperture. The plug admits of being more readily removed and replaced than a slide." A drawing of this instrument accompanies the text.

In describing the *irritable ulcer* of the rectum, Mr. Curling calls attention to its dependence upon, or connection with, the rectal pouches, and shows that it is not unfrequently mistaken for *a fissure* of the mucous membrane, because when it is examined while the rectum is not distended it presents a linear appearance. The symptoms of this troublesome and painful affection are well narrated. The treatment which the author advises, in common with most other surgeons, consists in making a longitudinal incision through the ulcer, including also the sphincter muscle. He says, "the cutting edge of a straight blunt pointed bistoury is to be applied to the centre of the ulcer, which is to be divided by an incision extending to the internal sphincter. The fibres of this muscle are easily felt with the left forefinger, and the depth of the incision regulated accordingly. When the ulcer is situated in the front part of the rectum, it should be divided a little to one side, or the wound will not heal readily; and besides, in the female the division towards the vagina may cause incontinence of feces." When this operation cannot be performed, from objection on the part of the patient or other cause, he advises rest, the employment of mild laxatives, and the local application of sedative and astringent or stimulating ointments. He particularly recommends, if the ulcer be very sensitive, and the spasm of the sphincter considerable, the use of an ointment containing chloroform, as follows: ℞.—Chloroformyl ʒj—ʒij; zinci oxidi ʒss; olei olivæ ʒj; cerat. cetacei ʒiv. M. ft. unguent.

Spasm of the Sphincter Muscle is the subject of the next chapter. It is described as occurring much more frequently in females, particularly those of great nervous excitability, than in the male. The symptoms are similar to those of the irritable ulcer, though less severe, and the feces are not streaked with blood or pus, as in the other case. The speculum should be employed to certify the diagnosis, the patient having been previously subjected to the anæsthetic influence of chloroform to relax entirely the sphincter. In ordinary cases the treatment which Mr. Curling counsels comprises the local direct application of an ointment containing belladonna, opium, or chloroform to the mucous membrane covering the sphincter muscles, and the employment of iron, with sea-bathing, attention to the condition and functions of the uterus, etc.

The succeeding chapter on Hemorrhoids is very full and instructive. In the cutting operations which may be practiced for their relief, the author very properly points to the liability to troublesome bleeding and the expedients for arresting it. These observations, as well as those which follow, upon Polypus, Prolapsus, Fistula in Ano, and Chronic Ulceration of the Rectum, though excellent in themselves, yet offer nothing which we need dwell upon as peculiar to this treatise.

The chapter on Stricture of the Rectum exhibits very well the author's careful study and wise surgical practice. The causes of stricture are ascribed to chronic inflammation of the mucous and submucous areolar tissues of the rectum, more or less limited in extent, and to contraction consequent upon the healing of ulcers, abrasions, or wounds. Mr. Curling considers the last-mentioned circumstances to be more frequent in their occurrence than is generally supposed. He mentions a case of stricture in a child of five years of age, the result of the perforation of the walls of the rectum and vagina by the pipe of a syringe in the endeavour to administer an enema; the child lived ten months after the reception of the injury. The symptoms and the physical alterations are well portrayed, and the treatment is fully detailed. The treatment of this affection must be chiefly mechanical, by dilatation. But before dilatation is commenced, the author advises the direct application of leeches to the inner surface of the rectum at or near the strictured part; Mr. Curling insists upon the necessity of very gentle and gradual dilatation of the stricture; and he considers it of questionable expediency, to attempt this treatment unless the contraction be within reach of the finger, because, when situated farther up the bowel, "there is no way of ascertaining its character, no guide for the selection of a proper-sized bougie, or for using it so as to dilate the contraction; no means, too, of determining positively whether the disease is simple stricture, or that form of disease—the carcinomatous—which is not likely to be benefited by mechanical interference, and in which the use of instruments is attended with risk of perforation." Previous incisions of the strictured part may be resorted to as adjuncts to the dilatation; and in making these, he prefers two or three cuts in different parts of the contracted ring rather than a single deeper division of the stricture, because the former method is sufficient to accomplish the end in view, and is much less likely to be attended with bleeding than the latter, and moreover it does not permit the access of feces and other irritating matter into the loose areolar tissue about the rectum. It is usually taught that a permanent cure, or even a lasting amendment, is rarely to be expected from dilatation of a stricture of the rectum, in consequence of the difficulty of overcoming the rigidity of the altered tissues, and of so modifying them that they may regain their normal physical and physiological properties. But Mr. Curling is more hopeful in this matter. He says: "More extended experience and longer observation of cases have convinced me that, if the dilating treatment be sufficiently prolonged, the areolar tissue may regain its elasticity and be restored to its healthy state, without retaining the disposition to contract and to indurate."

If it be impossible to overcome the contraction, and an operation for opening the bowel above the stricture be determined upon, Mr. Curling gives the preference to Littré's method, in which the incision is made in the left groin. The circumstances which render this step expedient or necessary, and the mode of ascertaining the probable position of the stricture, are ably presented. In short, this chapter will well reward the reader for its perusal.

Concerning Cancer of the Rectum, the book before us offers nothing particularly worthy of remark. Mr. Curling disapproves of excision in this disease, as practiced by Lisfranc and Dieffenbach, notwithstanding the assurances of the latter surgeon that he has performed the operation on no less than thirty patients, not one of whom died speedily afterwards. In some of these patients, the disease returned in three months. In one, a very large cancer, with destruction of the external skin and perforation of the bladder, appeared within a month; but the larger proportion of cases continued well many years afterwards. "I cannot but think," says Mr. Curling, "that an operation which subjects the patient afterwards to the misery of incontinency of feces and to great risks from a stoppage in the opening from the contraction of the wound, and, in cases where the cancer is sufficiently developed to leave no doubt of its true nature, to an early return of the disease, ought to be condemned. The chance even of a prolongation of life is not worth acceptance on the terms offered by such an operation." It should be condemned, in general terms, we admit, and not presented for the consideration of a patient excepting in its true colors, with all its painful accompaniments and gloomy prospects. But, after all, the Devil's assertion is still true, "Skin for skin, yea all that a man hath will he give for his life," even for a shadowy possibility of life. And the person who is tortured with a cancer of the rectum may perhaps feel that his cup is already so filled to overflowing with bitterness that a few additional drops could scarcely increase his misery, while the prospect of even temporary relief, dim though it be, may to him be worth the hazard; "the forlorn hope" has sometimes gained an important victory.

Mr. Curling alludes also to the Epithelial Cancer, first, we believe, noticed by Rokitansky, as occurring in the large intestine, especially in the sigmoid flexure and rectum, and makes mention of two cases of this form of disease which have occurred in his own practice. He likewise calls attention to one symptom, which is also found in some cases of stricture with ulceration, and which may mislead the practitioner, viz: pain in the hip, accompanied with lameness to such a degree that the patient limps in walking.

The last two chapters respectively treat of the Impaction of Feces in the Rectum, and Anal Tumours and Excrescences. These occupy only a few pages, but contain many useful suggestions concerning the recognition and treatment of these morbid conditions of the part.

We have no hesitation in commending this little book; we think it must contribute to its author's reputation as a wise and careful surgeon. F. W. S.

Art. XXIV.—*On the Therapeutic Application of Electro-Magnetism in the Treatment of Rheumatic and Paralytic Affections.* By Robert Froriep, M. D., Public Professor of General Surgery in the University of Berlin, &c. &c. Translated from the German, by Richard Moore Lawrance, M. D. London: Henry Renshaw, 1850.

The above title would lead us to suppose that the affections treated of all belonged to the nosological classes of rheumatism and loss of nervous power; while, in the table of contents, they are all classed as rheumatic. It is doubtful whether this application of terms is correct in some of the cases cited, although, in others, it will apply when restricted to the chronic form of this affection, or perhaps, more properly to the sequelæ of this peculiar form of inflammation. "To find a new, and hitherto unobserved symptom in a complaint of such common occurrence, seems nearly impossible," observes the author. Nevertheless, "a constant and characteristic sign of rheumatic disease," which has never been considered of diagnostic value, but is easily recognized, and bears "exact proportion to the complaint," is to be observed in a peculiar effusion occurring in the cellular tissue, whether subcutaneous or elsewhere; not only as a product of the inflammation, but also as acting mechanically in prolonging the disease. It is to this condition that the electro-magnetic current has been applied, and the cases given are evidence of its value as a local stimulant in relieving the morbid condition. The exact value of the application, and the diagnosis, can only be appreciated by a perusal of the cases themselves; and they afford additional inducements for the use of a much-neglected remedy of considerable power in obstinate chronic affections, especially of a local character accompanied by nervous lesions. R. B.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Absence of the Pericardial Sac, the Heart lying in the Cavity of the Left Pleura.*—Dr. Baly exhibited to the Pathological Society of London (May 20, 1851) a specimen of this rare malformation.—The subject of it was a man, æt. 32, measuring about five feet six inches in height, and of rather feeble frame: he died the 17th of May, 1851, in Milbank Prison, where he had been confined since the 16th December, 1850. Previous to his committal to Knutsford Gaol, in November 1850, he had followed the calling of a gardener. For nearly three months after his reception at Milbank he remained under the ordinary discipline of the prison, working as a tailor, and taking exercise for an hour daily. When admitted to the Infirmary of the prison, on the 7th March, he complained of cough and diarrhœa, had lost flesh, and was found to be the subject of pulmonary consumption. On the 26th March, symptoms of tubercular peritonitis supervened, and his emaciation became more rapid: he died in a state of extreme exhaustion.

While under observation at Milbank Prison, he presented no appearance indicative of obstructed or disordered circulation, and suffered from no more dyspnœa than usually attends tubercular disease of the lungs. His pulse was always regular, and its number, except during the last few days of his life, not more than 92; and, on the occasion when his chest was examined, soon after his admission to the Infirmary, nothing abnormal was detected in the action and sounds of the heart.

After death, there was found extensive tubercular disease of both lungs, and general cohesion of all the abnormal viscera by firm false membranes containing innumerable tubercles. The right lung, also, was universally adherent to the reflected pleura. The left lung was adherent at its summit, but in the rest of its extent was free; and, when the sternum and cartilages of the ribs were raised, it was at once noticed that the heart, having no separate sac to enclose it, was in close contact with this lung, and had at the same time no abnormal connection with the diaphragm: the heart and left lung lay, in fact, in one serous sac, the membrane forming which was reflected upon the surface of either organ, constituting in the one case the pulmonary pleura, in the other the visceral pericardium. This serous membrane, traced in the horizontal direction, after lining the sternum and the ribs on the left side, covering the posterior and outer surfaces of the lung, and then its inner surface, was reflected at the root of the lung directly upon the left pulmonary veins, and thus reached the base of the heart. After investing this organ, and the vessels arising from and around it, to the normal extent, it passed forward to the sternum, being here separated from a corresponding layer of the right pleura only, by a thick layer of fibrous and cellular tissue. The part of the diaphragm on which the heart and the left lung rested, being covered with the same serous membrane, formed the base of the large sac in which they lay.

Beneath and behind the heart, the serous membrane, where it passed from the base of the heart to the diaphragm, formed a crescentic fold. This fold, thickened by fibrous tissues between its layers, arose on the right side of the ascending aorta, passed downwards to the right of the right auricle, and in front of the inferior vena cava, and, crossing behind the left auricle, terminated on the left pulmonary veins. The depth of this crescentic fold was greatest posteriorly, but did not there exceed three quarters of an inch, except close to the vena cava, where the finger could be passed into a pouch behind it to the depth of an inch and a half. Below, and to the right of this crescentic fold of membrane, which, there can be little doubt, was a rudiment of the pericardial sac, fungi-like processes of brownish and loose fat, like that which commonly occupies the anterior mediastinum, projected into the cavity of the serous sac.

Another peculiarity was, that the left phrenic nerve, entering the thorax in the normal situation, instead of passing down between the heart and left lung, crossed in front of the arch of the aorta to reach the septum, between the two pleural sacs on the right of the heart, when it passed downwards, and, reaching the diaphragm, took a direction towards the left side.

A third fact noticed was that a thin and fragile false membrane, evidently the product of recent inflammation, covered the inner surface of the left lung, and that a similar false membrane invested to some extent the corresponding left side of the heart; a slight adhesion, of small extent, and easily ruptured, also existing between the apex of the heart and the contiguous surface of the lung.

The visceral pericardium, or the serous covering of the heart itself, was generally smooth, thin, and free from white spots. The heart was of normal size, and its valves were healthy.

Cases of congenital absence of the pericardial sac are confessedly very rare. Only two seem to have been recorded as having occurred in this country: one by Dr. Baillie (in the Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. p. 91); the other by Mr. T. B. Curling (in the 22d vol. of the "Med.-Chir. Trans.," p. 222). An exact account of a third case has been given by Breschet ("Répert. Gén. d'Anatomie," tom. i. p. 212); and references to a few others, less minutely described, and some of them not well characterized, will be found in Otto's "Pathological Anatomy" (transl. by South, p. 254).

In Breschet's case, and in Mr. Curling's, rudiments of a pericardial sac similar to those observed in the present instance existed behind the heart. In Dr. Baillie's case this appears to have been absent. In all three of these cases the left phrenic nerve took the abnormal course towards the right side of the heart, before descending to the diaphragm. And it may not be uninteresting likewise to notice, with reference to one suggested purpose of the pericardium—namely, the protection of the heart from inflammation which might otherwise extend to it from the lung or pleura—that while, in the present case, there were traces of recent inflammation of the serous membranes covering the contiguous surfaces of the heart and lung, in Mr. Curling's case there was a slight adhesion between the apex of the heart and the left lung, with partial thickening of the serous covering of both; and in Breschet's case were two slender adhesions between the heart and the diaphragm (see Mr. Curling's observations on this point, *loc. citat.* p. 229).

It remains only to state that, although the fibrous structure of the pericardial sac was to so great an extent absent, yet a thick fibrous stratum strengthened the serous membrane behind, and to the right side of the base of the heart, and descended to form with the tendinous portion of the diaphragm the same close connection which naturally exists between the fibrous pericardium and the central tendon of that muscle.—*London Medical Gazette*, July 4, 1851.

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2. *On the Persistence of Vital Properties in Limbs in the state of Cadaveric Rigidity.*—M. Brown-Sequard forwarded a note in which he stated that he had recently found that limbs, in the condition usually known as that of post-mortem or cadaveric rigidity, may still be living—*i. e.*, they may cease to be rigid,

may re-acquire muscular irritability and sensibility, and may be moved by the power of the will.*

The following is an abstract of these researches:—

In the body of a guinea-pig which had been in a state of rigidity from ten to twenty minutes, he had divided the aorta and vena cava at the point of bifurcation of those vessels. This done, he had brought the distant portions of these vessels, by means of a quill or glass tube, into communication with the aorta and vena cava of a living animal of the same species. The blood of the living animal has thus been made to circulate in the lower limbs of the dead animal. At the end of about eight minutes, the cadaveric rigidity of the lower limbs had disappeared, and, two or three minutes later, movements have been excited by irritating the limbs or nerves.

It follows from this experiment that the nerves and muscles, having lost their excitability, may regain these properties under the influence of blood, even where the rigidity has lasted a quarter of an hour.

The same result has been obtained by a more easy experiment. Having cut the body of a guinea-pig into two at the level of the lower border of the kidneys, leaving no communication between the two halves, except by the aorta and vena cava, M. Brown-Sequard then tied the aorta immediately below the origin of the renal arteries. The muscular irritability gradually diminished little by little, and gave way to cadaveric rigidity in between fifteen and forty minutes after the ligature of the aorta. After the rigidity had lasted fifteen or twenty minutes, the ligature was relaxed, the circulation was re-established in the posterior segment, and the rigidity was observed to disappear gradually, the muscles and nerves resuming their excitability.

Lastly, in order to ascertain if voluntary movements can be restored to limbs that have been in a state of cadaveric rigidity, M. Brown-Sequard has tied the aorta immediately below the origins of the renal arteries in healthy rabbits. The sensibility of the posterior portions of the body has been lost in six, eight, or ten minutes; two minutes later all voluntary movement has ceased. The irritability has lasted an hour. Rigidity has supervened in from an hour to an hour and twenty minutes after the ligature of the aorta. The rigidity was permitted to continue for twenty minutes, and then the ligature was relaxed. The circulation, and with it the functions of the nerves and muscles, were re-established.

The author concluded with these propositions:—

1. That muscles are not necessarily dead because they exhibit cadaveric rigidity—that, if they are not actually alive, they have the faculty of living.
2. That want of circulation of the blood deprives the muscles and nerves of their functions: the restoration of the circulation restores these.
3. That, notwithstanding the duration of rigidity shall have been as long as twenty minutes, sensibility and voluntary movements may be restored.—*London Medical Gazette*, July 18, 1851.

MATERIA MEDICA AND PHARMACY.

3. *On Antiseptics.* By MM. AUGEND and ROBIN.—In a memoir recently transmitted from Constantinople to the *Académie des Sciences*, M. Augend details a great variety of experiments he has been making upon the comparative antiseptic powers of ether and chloroform, which show those of the latter to be pre-eminently superior. To completely prevent the decomposition of a piece of fresh meat, $\frac{1}{200}$th part of chloroform sufficed. Its vapour traverses the densest tissues. It does not coagulate albumen like creasote, and is not decomposed by the muscular fibre. The most obvious action of the chloroform

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* It was stated by Dr. J. P. Kay, in 1834 (Treatise on Asphyxia), that limbs which had lost their muscular irritability might reacquire it by the injection of arterial or venous blood.

upon muscular substance and the fleshy pericarp of seeds and fruits is the production of an immediate contraction of the fibre or parenchyma, expelling the aqueous juices to the bottom of the vessel in which the experiment is conducted. M. Augend suggests, among various other applications, that this substance might be found of advantage when it was desired to preserve a corpse for a certain period for the purposes of legal medicine.

M. Robin has conducted numerous series of experiments upon the volatile compounds of carbon and hydrogen, which possess the power of preserving animal substances in spite of the presence of oxygen, as sulphuric ether, chloroform, naphtha, oil of pit-coal, &c. &c. These bodies and their vapours enjoy complete antiseptic power, the blood in fleshy substance being maintained in quite a fresh state. Water impregnated with the vapour of these hydrocarbonates possesses similar power.

Conducted by analogy of chemical composition, he has discovered another order of substances, possessed of a high degree of antiseptic power, viz., the binary compounds of carbon and some other metalloid than hydrogen. He has proved experimentally, that sulphuret of carbon, protochloruret of carbon, azoture of carbon, the Dutch fluid, and hydrocyanic acid, are, like the carburets of hydrogen, powerful preservatives of organic matters. The vapour of these substances, disengaged at the ordinary temperature in closed vessels, preserves such for an indefinite period. For the preservation of the colour of bodies, chloroform, protochloruret of carbon, and oil of pit-coal, are very superior in efficacy to bodies hitherto employed; but they are far from equalling hydrocyanic acid in this respect, the vapour of which absolutely prevents all physical alterations whatever. Nevertheless, in reference to the price of its production, the power and rapidity of its preservative action, no substance presents such great advantages as oil of pit-coal, the rectified allowing much less change of colour than the impure. M. Robin believes it may be advantageously employed for embalming, in the preservation of bodies for dissection or of anatomical preparations, in the tanning of leathers, for the destruction of insects that attack collections of natural history, trees, or seeds, and for the conservation of cereals and seeds in general.—*B. and F. Med. and Chirurg. Rev.*, July 1851, from *Gazette Médicale de Paris*, 1850, Nos. 46 and 48.

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4. *On Local Anæsthetics.*—M. ARAN has for some time been actively engaged in following up the experiments of the English and French observers upon local anæsthetics, and the following are the conclusions of his last paper read at the *Académie des Sciences.*

1. Local anæsthetic properties are found in all agents which have been recognized as possessing general anæsthetic ones, and in others of analogous composition, belonging chiefly to the series of chloro-hydrocarbons. 2. These local properties are not in direct proportion to the general ones, but rather to the fixity of the substance. The more volatile the body, the less is its local anæsthetic power, which explains the inferior degree in which sulphuric ether possesses this property as compared with other anæsthetics. 3. A great number of anæsthetics produce irritation of the skin, and chloroform is remarkable in this respect. 4. The agent which is the most convenient to manipulate, the most certain in its action, and the least irritating to the skin, is the *chlorined hydrochloric ether* (*éther hydrochlorique chloré*) recently introduced by M. Mialhe as an advantageous substitute for the "Dutch Liquid," under which name two fluids of very different power are on sale. The *sesquichloride of carbon* may also be so employed; but while the complete effect of the former is obtained at the end of some minutes, the sesquichloride requires at least two hours. 5. In order to obtain satisfactory anæsthetic effects, small quantities of these two substances suffice. From 15 to 30 drops of the ether may be applied directly to the part, or upon moist linen, covering it over to prevent evaporation. Or an ointment may be composed of 4 parts to 20 of lard, or of 4 parts of the sesquichloride to 33 of lard. 6. Anæsthetic agents, and especially the chlorined ether, produce, after an interval of from two and a half to ten minutes, a complete cessation of pain, and after a time, varying from five to fifteen minutes, a cutaneous insensibility that may be easily estimated by means of a needle.

7. The insensibility is not limited to the point at which the application has been made, but extends to the deep-seated parts themselves; and in this way by applying it to the skin we relieve the pain of muscular organs, nerves, articular cavities, and the viscera contained within the thorax and abdomen. Moreover, the anæsthetic effect extends for a variable distance around the point of application, rarely less than to two square inches. 8. The duration of the insensibility varies according to the nature of the agent employed, the quantity applied, and the duration of the contact. It lasts only from one-half to an hour, when the anæsthesia is produced in the physiological condition of parts; but it continues much longer when the application has been made in order to produce insensibility to pain—*analgesia.* 9. In a medical point of view, the number of cases in which local anæsthetic applications may be employed is truly immense. The following proposition is the result of a very multiplied experience: *Whenever there exists an acute pain in any part of the economy, whether such pain itself constitutes the entire malady, or only forms an integrant and principal part of it, we may, without any inconvenience resulting, relieve the patient of it for a period more or less long, by one or several local anæsthetic applications.* The employment of these agents in *rheumatic muscular pains,* and in *neuralgic pains,* has become too common to need additional illustration; but it may be observed that the latter do not become *cured* unless they are very recent. M. Aran is, however, especially desirous of calling attention to their great utility in *articular diseases.* In *subacute* and *chronic articular rheumatism,* they remove pain in a few minutes. They give great relief too in *subacute* and *chronic arthritis;* but here they are especially useful in favouring the application of certain surgical procedures, as *e. g.* compression, extension of contracted joints, &c. It is, however, in *acute articular rheumatism* that he has derived really surprising benefit from these means. The ease obtained restores to the patient temporarily the use of his limbs and his sleep; and the duration of the disease becomes much abridged. This medication may be combined with venesection or any other mode of internal treatment. By the same means he has treated *lead colic, nervous, uterine,* and *nephritic colics,* and even the pain attendant upon *puerperal peritonitis, pleurisy,* and *pericarditis;* and in all, when complete and definitive cessation of pain has not resulted, at least a degree of amelioration and relief that could scarcely have been hoped for has been obtained.—*Brit. and For. Med.-Chirurg. Rev.,* July 1851, from *L'Union Médicale,* 1850, No. 154.

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5. *On the best Mode of preparing the Juice of Dandelion, so that it shall continue in perfect preservation throughout the year.*—The following mode of preparing the juice of dandelion, advised by Mr. Donovan (*Dublin Medical Press,* June 11th, 1851), is worthy the attention of pharmaceutists:—

"The dandelion abounds in a milky juice; it has no smell: its taste when recent is very bitter, the roots more so than the leaves. By drying, the bitterness is destroyed, as happens to many other vegetable substances. I have observed that the juice of the recent roots and herb loses its bitterness by long boiling, and that it even assumes a saline sweetish taste, such as is observable when it is extracted from plants dug during the cold months of the year. The change happens more easily in the juice of the leaves than in that of the roots; yet a decoction of the roots long boiled retains but little of its bitterness. The recent juice of the roots, if evaporated to dryness and restored to its original bulk by the addition of water, will be found by far less bitter than before. The solid extract is therefore a bad preparation, and, as Lewis observes, becomes still worse by being kept. Indeed, the extract of commerce has but little bitterness, and is often so sweet as to suggest a suspicion that it contains a foreign admixture: I have sometimes thought that it was the sweetness of Spanish liquorice. Its colour, which ought to be brown, is generally black.

"The bitterness is due to the presence of a proximate principle said to be crystallizable. When this has been impaired or removed by boiling, a sweetish, saline, and even acidulous taste is discoverable: it naturally belongs to the juice; for, besides the bitter principle, it is known to contain phosphates, sulphates, muriates, and tartaric acid, or a bitartrate, which are the useful ingredients; along with uncrystallizable sugar, gum, inulin, caoutchouc, and some other matters of no medical importance. The bitter principle and salts are the constituent ingredients which claim the attention of the practitioner; and it is to their preservation, by whatever process the juice is prepared, that the apothecary should devote his attention; for, as Dr. A. T. Thomson truly observes, 'much depends on the nature of the preparation.'

"Keeping the foregoing observations in view, the best mode of conservation is obvious. The whole herb as soon as dug is to be washed immediately, well pounded, and the juice extracted by means of the press. Delay in pounding the roots will soon begin to impair their bitterness; and even the expressed juice will speedily begin to change unless put in process of preservation very soon after expression. When the juice has been pressed out, the marc, still containing valuable matter, is to be well mixed with as much water at 200 deg. as will bring the whole to about the consistence of a pulp. After standing two hours, the liquor is to be pressed out, added to the former product, and the mixture is to be very slowly evaporated in a wide earthen vessel, with constant agitation, until it be reduced to one-half. We now have the salts (which in a medical point of view are of great importance) and other ingredients in a much more concentrated form than in the original juice: but the bitter principle has been somewhat impaired in efficacy during the evaporation. Even if this deterioration had not taken place, the juice does not in its natural state contain a sufficient ratio of the bitter principle to act with adequate effect as a tonic when so moderate a bulk of the liquid is administered as is convenient or suitable. On this account a quantity of the roots without leaves, equal to the weight of the whole herb previously employed, must be pounded and expressed. This bitter juice, which is very small in quantity, not in some seasons more than a gallon from 112 pounds, is to be laid aside until the residual marc, from which it has been pressed, has undergone a new process, which is as follows: The mixture of juice obtained from the whole herb and the evaporated infusion of its marc is again to be brought to a boil, and at that temperature is to be infused on the marc of the roots; the temperature will thus be reduced below the injurious degree, but will be still sufficient for extraction of the bitter. When cold, the liquor is to be strongly pressed out, and mixed with one-sixth of its total measure of spirit of wine. The mixture is to be poured into common quart bottles, but they are not to be entirely filled. Appert's process, somewhat modified, must now be resorted to. A large shallow vessel containing cold water is to be placed on a fire: the nearly filled bottles are to be immersed in the water as high as the liquor within: the water is to be slowly brought to about 180 deg.: the bottles are to be withdrawn, and the reserved juice obtained from the roots is to be added to each in equal quantities. These quantities ought to fill the bottles so high in the neck that when the corks are driven in there will be the smallest possible intervening space. The corks being cut off close to the glass, the mouths are to be sealed with hard bottle wax: and the bottles set by, inverted, in a cool place.

"The bitter principle, obtained in the second part of the process, having been scarcely exposed to heat, is as perfect as it existed in the roots. Heat is highly injurious to the active principle of various vegetable substances. The root of arum maculatum is poisonous and so acrid that it will blister the skin; but by boiling or even drying it becomes harmless, and in that state is by some nations used as food. Mezereon bark in its recent state also blisters the skin, but by the moderate heat of drying it loses this power. The seeds of palma Christi are acrimonious and violently cathartic; yet when boiled they are used as an article of diet. The root of the cassava plant, which, like dandelion, yields a milky juice, is in its natural state a violent poison, but when boiled it becomes harmless: the leaves, equally poisonous, are by heat rendered innocuous, and are eaten as a culinary vegetable: tapioca, the food of the invalid, is obtained from the roots. The effect of heat on onions and garlic is known to every one.

"The quantity of spirit of wine here made use of, although it conduces to the preservation of the juice, is by itself insufficient: hence the necessity of Appert's process. Each ounce will contain about one drachm of spirit of wine; more might be disagreeable or inexpedient.

"By the foregoing process, we have dandelion juice in a degree of perfection not very inferior in qualities to that which exists in the plant in its natural state; and in a condition to retain its virtues throughout the year."

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6. *On the Galvanic Cataplasms of Prof. Recamier.*—Dr. Tilt read to the Medical Society of London, May 31, 1851, a communication on this subject.—After some preliminary observations, Dr. Tilt stated that he wished to draw the attention of the Society to the particular mode of employing electricity, in which continued currents are generated by the contact of metals, by which means a large quantity of electricity is obtained at a low tension.

There are many machines constructed on that principle; but they are all ponderous complicated machines, liable to get out of order, and therefore requiring the guidance of some one who well understands their action. The feelings of awe, too, with which the patient generally beholds them, interfere frequently with the effects we desire to obtain. Would not, then, a milder application of the same agency, by permitting its prolonged employment, enable us to do more good than could be effected by the previously employed energetic modes of application? This simple question must have suggested itself to many, and it has suggested itself to a fellow of this Society, who has given great attention to the therapeutical influence of electricity. "I was very sanguine (says Dr. Golding Bird) that the current excited by a simple pair of zinc and silver plates, similar to those we employ to excite the contractions in a frog, would be found of great value in practice." But, to obtain an action, Dr. G. Bird thought it necessary to remove the cuticle from the skin; and then he found that the most oxidizable of the two metals produced sloughing of the skin, or, in other words, the electrical moxa of which he had shown the utility.

Previously to this, Mr. Spencer Wells had ascertained that the removal of the cuticle is not necessary; and that, by applying to the skin, previously moistened by diluted vinegar, two plates, one of silver and the other of zinc, connected by a silver wire, a marked electrical action was obtained; disordered functions of a particular nerve were restored to their normal state, and ulcerated surfaces were rapidly healed.

For many years Professor Recamier had made use of electricity by means of the energetic apparatus usually employed; and it may perhaps be remembered that, a few months ago, he presented to the French Academy of Medicine some remarks on a new mode of supplying electricity, by what he called galvanic cataplasms, consisting of filings of copper and zinc enveloped in cotton wool. Lately he had improved on this rather clumsy contrivance, and he had sent Dr. Tilt the little apparatus which he had now the honour of submitting to the inspection of the Fellows. Each of these cataplasms, or disks, if a scientific term was preferred, is a galvanic pile composed of twelve couples. The couple is formed by a ribbon of zinc and copper, and each couple is separated by a piece of flannel. On the coloured side is cotton wool; on the other, a piece of gutta percha tissue to insulate the apparatus. The only difference between the two disks is, that, in the pink one, the copper stands first, while the zinc comes first in the one covered with blue. The electrical force generated in the apparatus is sent through the copper rings, to which the insulated copper wire can be attached, when the more energetic effect of the two cataplasms is required. In some people, the acid perspiration of the skin is sufficient to increase the intensity of the electric action; but more active effects are produced by wetting the flannels with diluted vinegar, or a weak solution of common salt, as is seen by the action of the apparatus on the electrometer. When one of these cataplasms is tightly bound to the surface on the skin, it gives an unusual sensation of warmth; a pricking sensation is felt, and the skin is made red, when two of the cataplasms are connected by the wire, and applied to the same surface, but at some distance from one another. A stronger effect is produced when one is applied to the organ we wish to influence, and another to the opposite portion of the spine. Such are the modes of application; and it may be worn day and night without inconvenience, though, in ordinary cases, it is only under application at night. In what cases this apparatus has been, or may be expected to be useful, is a question which now naturally suggests itself. In the hands of Professor Recamier, it once brought on menstruation before the usual time. He therefore intentionally applied it for that purpose, and with success in cases of chlorotic amenorrhœa. He is trying it in such cases of sterility as cannot be accounted for by any disease, but which seems to depend on a defective ovarian action; and, amongst other cases, on an illustrious lady, whose barrenness menaces to extinguish one of the oldest dynasties of Europe, and also in the case of a Russian princess. In this last case, menstruation, which formerly lasted but thirty-six hours, now continues for six days. This is the first effect; but time alone can show whether sterility will be removed in this or the other cases. Dr. Tilt thought it would help to cure some of those tedious cases of chlorosis, where a girl eats heartily, takes plenty of sleep and exercise, has nothing on her mind, and still derives but little benefit from good food and judicious treatment. In hopes that this mild electric action may take effect on the ganglionic nervous system, and give a spur to defective nutrition, he has lately applied one of the disks to the epigastric region of a patient, and the other to the spine. Besides these trials, Professor Recamier has applied these galvanic cataplasms, with marked and rapid success, in the treatment of rheumatic and nervous pains; in one obstinate case of constipation of some years' standing; in a case of asthma; and a patient suffering from angina pectoris was benefited, but not cured. Dr. Massé, and several other medical men in Paris, have found them successful in similar cases, as you will see by perusing the pamphlet Dr. Tilt presented to the Society. In this communication he has merely stated the results said to have been obtained by his venerable teacher; and, if this had not been the last meeting of the Society, he would have delayed drawing the attention of the Society to the subject until he had been able to test its utility by his own observations. He thought, however, the matter sufficiently deserving of consideration; and if, on account of the harmless appearance of the apparatus, the Fellows should be tempted to consider it ineffectual, he would beg to refer them to an authority already quoted, who says: "From what I have seen, I am fully convinced that a feeble current, if kept up for a long time in certain forms of paralysis (care being taken that the positive fluid traverses the limb in the direction of the nerves), would prove the most important mode of applying this remedy with success." It seemed to Dr. Tilt that Professor Recamier's cataplasms would be useful; and, as it was impossible for the Fellows to give them a trial without knowing where to get them, he concluded by informing them that the apparatus might be obtained of Mr. Joseau, of the Haymarket, or of Mr. Bucklee, of 86 New Bond Street, Oxford Street, at the cost of 15*s.*—*London Med. Gaz.*, June 1851.

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

7. *Lungs showing the Arrest of Phthisis in the Third Stage of the Disease.*—Dr. Quain presented to the Pathological Society of London, lungs showing the arrest of phthisis in the third stage of the disease.—A female, in May 1848, when thirteen years of age, was admitted an out-patient at the Brompton Hospital. She was very delicate, had lost flesh, and was suffering from severe cough, shortness of breathing, &c. Her illness had commenced with influenza in the early part of the preceding winter; she had also suffered from an abscess in the right arm. She had been recommended cod-liver oil, but was unable to keep it on her stomach. There was no predisposition to phthisis, and she had not then had hæmoptysis. Since that time, a younger sister has shown unequivocal evidence of phthisis, and an older sister has now become delicate. A note, taken shortly after her admission, states that "there is extensive consolidation at the apex of the left lung, and some deposition at the apex of the right," shown at the one side "by decided dullness, bronchial

breathing, and bronchophony; and, at the other side, by a feeble inspiratory, and a prolonged louder expiratory murmur."

A mixture, in which a drachm dose of cod-liver oil was diffused by means of liquor potassæ in mucilage, and a syrup composed of mucilage, syrup of squills, and a minute dose of morphia, was prescribed. The oil mixture was taken without disturbing the stomach, and she kept her ground. Examined in August, she is stated to have lost four pounds in weight, and crepitation is heard over the left apex; nothing additional at the right apex. Iodine counter-irritation was then applied. In the beginning of September she had profuse hæmoptysis, and subsequently a free puriform expectoration.

An examination, made in the course of this month, when she was able to attend the hospital, showed the existence of a large cavity, where the consolidation and softening had been previously observed. The dose of the oil was subsequently increased, first to a drachm and a half, and then to two drachms, with advantage; for, in the end of the following December, it is recorded that "she gains strength, and coughs but little." She did not attend during this winter, but received her medicine by her mother, and did well. In April 1849, she had an attack of influenza, from which she soon rallied.

In the following June, the record is that "she has not lost ground, though she has not gained in weight since her admission a year ago: there is loud pectoriloquy, cavernous breathing, and gurgling at the left apex, and loud expiratory murmur at the right."

At the end of July the report is, "she looks well; coughs only in the morning."

In August an examination showed "flattening of the chest over the apex of the left lung. The respiration there, though cavernous, is not loud. The pectoriloquy is very distinct. The respiration at the right apex is somewhat puerile." During the winter (1849-50) she continued the remedies.

In February, her appetite had failed, and a mixture of infusion of gentian and bicarbonate of soda was ordered once a day. From this she derived so much benefit that it was continued three times daily, and she was able to take the simple aniseed oil in half-ounce doses.

The following June it is noticed that she has had an attack of nettle-rash, but is still gaining strength, grows tall, and coughs but little, and only in the morning.

This improvement continued; and it is noted that last October she came to the hospital, having been for some time in the country, looking extremely well. Her weight, which at one time had been as low as four stone two pounds, is now four stone nine pounds. She had scarcely any cough; her appetite is good. She is free from suffering of any kind. Examination of the chest shows remarkable flattening and contraction over the apex of the left lung. There is very evident dullness in this situation, and the mobility here is as nine to thirty-two of the opposite side. The respiration is of a sharp whiffing character, with slight crepitus. At the opposite side the respiration is loudly puerile, and percussion shows the right-lung extending across the sternum to the left side. At the summit of the left lung posteriorly the respiration is scarcely audible. The dullness here is more decided than in front. The heart is seen and felt to beat distinctly from between the second to the fourth left costal cartilages. The action of the heart in this situation had been a source of some annoyance to her. From this time (October) to the commencement of last March, this improvement continued. Her cough had nearly if not altogether disappeared. She continued the gentian with soda, the cod-liver oil, and the counter-irritant occasionally. At the beginning of March, during the prevalence of the influenza, she was attacked by the gastric, and not the pulmonary, complication of the disease. It commenced with bilious vomiting, followed by diarrhœa, great prostration, and rapid collapse, from which she died on the fourth day.

The body was well proportioned, and showing a very fair amount of fat in the subcutaneous tissue. The right lung was seen to be very voluminous, and extending across nearly as far as the left margin of the sternum. There was no appearance of the left lung in front, but its place was occupied by the heart and pericardium drawn upwards and to the left side, and the walls of the apex of the chest falling inwards and downwards. The heart was healthy, and rather large for the size of the body. The left lung was found much diminished in size behind it. The lung was adherent more especially at the apex, which was covered posteriorly by a mass of solid fibrinous tissue, corresponding to the seat of dullness and feeble respiration previously mentioned. Very nearly the whole of what had been the upper lobe of this lung was occupied by the remains of a cavity irregularly divided into two, by one of the bands so frequently seen in phthisical cavities. The entire cavity was about the size of a large walnut. It contained about half a drachm of a thin whey-like fluid, with which were mixed particles of whitish coagula. The walls were formed by condensed pulmonary tissue, varying in thickness from less than a line to a quarter of an inch, and in some points puckered and contracted. The air-cells and small bronchi were distinctly visible, under the microscope, in this tissue, which was separated from the contents of the cavity by a wall or membrane composed of firm filamentous tissue and granular cells. This membrane had much the appearance of a mucous membrane, but it was not examined sufficiently soon after death to be able to trace the presence of an epithelium. The cavity communicated with the left bronchus by an orifice which would admit a crow-quill, situated midway between the top and bottom of the cavity. There was a good deal of healthy respiratory tissue in the lower lobe of this lung; but there were scattered through its substance six or seven points of condensation, such as are hereafter described existing in the right lung. The right lung was large, and the air-cells partook of its character. In water it displaced a quantity which measured twenty-three ounces, whilst the left displaced but nine ounces. The apex was remarkably puckered; and on cutting through this puckering the tissue of the lung was found to be traversed by short fibrous bands, between which appeared points of softish pale-yellow tubercle. A little lower down in the centre of the upper lobe a mass of soft tubercle, about the size of a small hazelnut, was found. It was enclosed in a cyst, and consisted almost entirely of fatty granules and cells containing similar particles. In the other lobes, several consolidated points were found—the largest smaller than last described, and none so fully formed. They appeared in some places to consist merely of condensed tissue; in two there was an appearance of yellow, firm tubercle; and in two, small calcareous particles. In neither lung was there the least appearance of recent tuberculous deposit. The other organs were healthy; the kidneys were large. There was no disease of the intestine beyond congestion, which in some parts was very distinct.

This case affords an additional illustration of the great extent to which the ravages of pulmonary phthisis may proceed, and its progress yet be stayed. Such cases were, happily, now met with more often since cod-liver had come into use: still Dr. Quain did not know of any case which afforded, by the evidence of post-mortem examination, so striking a result. This case was also interesting from its throwing light on the nature of the puckerings so constantly seen. Some observers were disposed to regard them as being independent of tuberculous deposit. In this case it was evident that they were due to the previous existence of this deposit, which, in fact, had been recognized there during life, and traced after death.—*London Med. Gazette,* June 1851.

8. *A Statistical Report upon Disease of the Heart, derived from a consideration of all the Cases admitted into St. George's Hospital during the last two years and a half.* By Dr. Barclay. ("Proceedings" of the Royal Med. Chirurg. Society, June 24, 1851.)—Rheumatism is first considered as one of its causes. Divided into two nearly equal classes—those really inflammatory or acute, and those less so, or sub-acute—the former class is found to contain sixty-seven cases with cardiac lesion, sixty-four without, and twenty-one doubtful. Endocardial murmur is found not to be certain evidence of disease, even in the most acute cases. Females are slightly more liable to acute rheumatism than males, but less liable to a recurrence of the disease. Females are more decidedly liable in a larger proportion to cardiac complication, and this is especially proved by the existence of friction-sound in the proportion of three females to two males. Cardiac complication exists eighteen or twenty per cent.

more frequently in subsequent attacks than in primary ones. It is in the proportion of three to two of all the cases up to the age of twenty-five, and falls very rapidly after that age. The cases of sub-acute and chronic rheumatism furnish no examples of recent inflammation of the heart, but a considerable number of cases of old disease. So far as could be ascertained, these were almost all traceable to previous acute attacks, and were only about one-third of the cases which had previously suffered from acute rheumatism. The post-mortem appearances of recent inflammation are found associated with acute rheumatism, with disease of the kidney, with inflammation of the peritoneum and pleura, and with old disease of the heart, especially when hypertrophy existed, and with turbulent action during life. The cases of old disease of the heart are divided into sixty-one rheumatic, seventy non-rheumatic, and sixty-nine doubtful. They show a very considerable preponderance of males, especially among fatal cases. Up to the age of twenty, almost the whole, and even as far as thirty, more than half the cases are associated with acute rheumatism. In the next twenty years, the non-rheumatic almost double the rheumatic cases, and after fifty, there are scarcely any derivable from rheumatism at all. The duration of rheumatic cases, dating from the first attack of acute rheumatism to death, is generally much longer for females than for males, varying in the latter from four to six years; in the former, from twelve to sixteen years. Four out of seven fatal cases of acute rheumatism, and twelve out of eighteen of older standing, are associated with pericarditis, which is always severe and extensive; but universal adhesion is neither the constant nor even the common result of rheumatic pericarditis, and it exists in cases where the previous existence of rheumatism is altogether denied. In valvular disease, there are eighteen rheumatic cases, twenty-three non-rheumatic, and twelve doubtful. The recent cases are all examples of inflammation of the mitral valve. When old and recent disease exist together, and when old disease is seen in different stages, the mitral valve generally appears to have been first attacked, and the aortic secondarily; and hence the preponderance of double valvular lesion in rheumatic cases seems to be due to renewed inflammations at distinct periods. Inflammatory thickening occurs also in several cases in which there had been no rheumatism. Disease of the kidney is associated with two cases of simple recent fibrinous deposit on the valves, and three of recept pericarditis, in which no other cause was known to have been in operation. It seems questionable how far this can be taken as a cause of great thickening of the valves, or of an adherent pericardium. Disease of each set of valves seems to produce, in nearly equal proportions, hypertrophy and dilatation, but aortic regurgitation especially the latter; atheroma of the aorta, more commonly hypertrophy; adhesion of the pericardium, chiefly dilatation. Disease of the kidney is associated with an immense majority of the cases of hypertrophy, and similarly of all the cases of disease of the kidney; more than a third presented on post-mortem examination more or less of hypertrophy of the heart. A table is appended, in which the post-mortem appearances are arranged, of all the cases in which clinical history threw any light on the disease of the heart found after death.—*Lancet*, July 12, 1851.

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9. *On Anasarca in Disease of the Heart.* By M. Chomel.—The progress of infiltration is ordinarily slow and progressive in affections of the heart; but, nevertheless, nothing is more common than to meet with individuals among the working-classes, who, while presenting the appearance of health, and without having manifested any sign of disease, are seized with anasarca, the physical and material signs of cardiac alteration not being present, or only, at all events, to a very slight degree. This is because there are causes prevailing in this class of society—such as excess of labour, fatigue, watchings, misery, drinking—which, in a measure, precipitate the course of the disease. These causes come in addition to the natural influence of the disease; and the anasarca appears at a period when without these it would not have manifested itself. So, when these causes are removed, and the patient is kept at rest, and sheltered from the unfortunate conditions that have given rise to so serious a complication, the œdema diminishes daily, and the patient soon leaves the hospital be-

lieving himself cured. New exposure to excesses, fatigue, or misery, reproduce the anasarca, which may be again dispersed, and that for several times; but after a certain number of such attacks, it in the end becomes permanent.

Frequently the appearance of an acute anasarca throws a ray of light on obscure and embarrassing cases, indicating in the great majority of cases an acute disease of the heart. Doubtful endocarditis and pericarditis are often thus revealed to the observer by general œdema. M. Chomel thus considers that in the case of anasarca coming on, when we can discover neither change in the blood nor albumen in the urine, we are authorized in admitting the existence of disease of the heart, or large vessels, even when all material signs of this affection are completely absent.—*British and Foreign Medico-Chirurgical Review*, July 1851, from *L'Union Médicale*, 1851, No. 26.

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10. *Cases in which there was unusual Difficulty in the Diagnosis of Pleuritic Effusions.* By T. A. Barker, M. D. ("Proceedings" of Royal Med. Chirurg. Society, May 27, 1851.)—The first case related by the author was one in which there was extensive emphysema of the left lung, which had encroached greatly on the right side of the chest, pushing the heart and mediastinum beyond the mesial line. The right lung, which was closely adherent to the costal pleura, was reduced to about a fourth of its usual size, was exsanguine, and contained no air, resembling a lung compressed by effusion in the pleura. In consequence of these changes, no respiration could be heard in the right lung during life: the right side of the chest was universally dull on percussion, and the patient could only lie on the right side or sit erect. Along with these symptoms were others closely resembling those which usually attend hydrothorax; and the dyspnœa and symptoms of approaching apnœa being very urgent, the author thought himself justified in having a very fine trocar introduced into the chest, in order to ascertain positively whether there was fluid. No inconvenience resulted from the operation, and the symptoms were soon afterwards explained by the discovery, on post-mortem examination, of the very unusual state of parts above described.

The next case was one in which, without any of the general symptoms of pleuritic effusion, it was discovered, by auscultation, &c., that there was no respiration going on in the posterior third of the left lung. In four days the person died. The lungs were healthy; but there was extensive effusion, confined to the back part of the chest by a very narrow line of adhesion, extending from the upper and back part of the chest to the diaphragm, half way between the ribs and the sternum. The author referred to three other cases which he had seen, in which the pleuritic effusion had been limited by adhesions in the same position and precisely similar; only one of these had been seen by him during life, and in that the symptoms closely resembled those in the case last related. Two other cases were shortly alluded to, in which there was emphysema to a considerable extent; but respiratory sounds could be heard in every part of the affected sides, in consequence of the lung being kept partially in contact with the ribs by mucous adhesions, forming several separate cavities in which the purulent matter was contained.—*Lond. Med. Gaz.*, June 1851.

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11. *Treatment of Erysipelas by the Muriated Tincture of Iron.*—Dr. G. Hamilton Bell, in a paper read before the Medico-Chirurgical Society of Edinburgh (April 10th, 1851), and published in the *Monthly Journal of Med. Sci.* for June last, extols the efficacy of the muriated tincture of iron, in the treatment of erysipelas, a mode of treatment which he has resorted to, he says, in every case of the disease he has attended for upwards of a quarter of a century, without having in a single instance failed of success.

The first object is, he says, to have the bowels freely acted on, and then he administers the tincture in the following mode: "If the erysipelas be mild, fifteen drops of the muriated tincture of iron are administered in water every two hours until the disease is completely removed. When the attack threatens to be more severe, the dose of the tincture is increased to twenty-five drops every two hours, and persevered in night and day, however high the fever and delirium. The only local applications I ever find necessary, are hair powder and cotton wadding. While I depend for the removal of the disease on the chalybeate, it is necessary that the bowels should be attended to throughout the treatment."

Several cases illustrative of the value of this mode of treatment are related.

Dr. C. **Bell** also addresses his testimony in favour of this treatment, and states that he has "prescribed it (the muriated tincture of iron) both in the idiopathic form of the disease, and in that consequent on external injury, with the most satisfactory results; and I have found it equally efficacious at every period of life, from early infancy to advanced age. It not only removes erysipelas in a remarkably short time without weakening the patient, but it effects such an improvement in the system, that those who are subject to periodical attacks of the disease are rendered much less liable to have a return.

"The beneficial effects of this medicine are so immediate and invariable in the common forms of erysipelas, that I feel convinced, were it given with boldness and perseverance in puerperal fever, which is now generally admitted to be analogous in its nature, and frequently accompanied by erysipelatous inflammation on the surface of the body, many valuable lives might be preserved.

"In pursuing the chalybeate treatment of erysipelas, I consider it of much importance to bring the system rapidly under its influence, in order to effect a speedy removal of the disease. I have therefore been in the habit recently of giving much larger doses of the tincture than I ventured to prescribe at first. It is a remarkable circumstance in the exhibition of this valuable remedy in the erysipelatous diathesis, that although given in much larger and more frequently-repeated doses than have been recommended in our dispensatories, it never produces headache, and when this symptom is present it quickly relieves it; at the same time, it reduces and regulates the pulse: thus showing that in this state of the system, it has a soothing and sedative, as well as alterative effect."

He particularly calls attention to the advantage of this mode of treatment in infantile erysipelas, and also in that form dependent upon external injury.

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12. *Cod-Liver Oil in Gaol Cachexia.* By **Caleb Rose**, Esq.—From the extensive trial which has been given to cod-liver oil, the profession is now able to form an opinion of the value of this medicine in certain diseases; and the author believes he is right in stating that those who have had large experience in the use of the oil esteem it a medicine of great utility. The diseases in which cod-liver oil has been found most beneficial are those which are termed scrofulous; and the author has found it so useful in a particular form of scrofula, that he has thought it might not be uninteresting to record the result of his experience in this form of disease. The form of scrofula to which he alludes is that to which prisoners are liable who have been for some considerable time confined in prison. Dr. Baly, in a very interesting article in the "Medico-Chirurgical Transactions," has shown that amongst prisoners who undergo a long term of imprisonment there is a high rate of mortality from tubercular diseases. In the last seven years the author has seen several cases of this scrofulous cachexia amongst the prisoners confined in the prison at Swaffham; and it appears to him to be different from the ordinary forms of scrofula met with in general practice. The men who have been the subjects of it, have not been robust at the time of their entrance into the prison, but they were not at this time apparently suffering from scrofula or any other disease. They had all been in prison six months before symptoms of scrofula appeared; most of them eight months; and their term of imprisonment was twelve months, and in one case, the author believes, two years. The symptoms of the disease are these: The man is observed to look paler and thinner than usual; he is very much depressed in spirits; has no appetite for his food; sleeps badly at night, and at that time, also, frequently has profuse perspirations; there is slight diarrhœa; the pulse is quick, irritable, and feeble. With those symptoms, the author has in every case found some of the cervical glands more or less enlarged, and, moreover, they continue to enlarge very rapidly. In the first five years, three of the men died in prison, two of very rapid phthisis (one of them of sudden and large hæmoptysis), the third of tubercular peri-

tonitis. The others who were seriously affected with this scrofula were discharged from prison before their proper time, and, I have since learned, recovered speedily after their liberation. Those who suffered in a minor degree were carried on to the end of their term of imprisonment by care and indulgence. Rather more than two years since we began to treat these cases with cod-liver oil, and with the best effects. As soon as a prisoner begins to show that marked deterioration of general health which is so likely to end in the development of scrofula, he is put upon the oil; and in every case the author has seen the man gain colour and flesh, and become restored to health. The two men who first took the oil had the cervical glands much enlarged (in one of them suppurating), and as they had still to remain some months longer in prison, it was thought that they must have been discharged before the end of their term; however, after taking the oil a month they improved steadily, and eventually left the prison at their proper time, in as good health as when they entered it. Since these two cases there have not been any so bad, as the oil has been administered in good time to those men who have shown that deterioration of health which appears to be the commencement of scrofula; and certainly their health has apparently been entirely restored by this valuable medicine.—*Ranking's Abstract*, vol. xiii., from *Prov. Med. and Surg. Journ.* Nov. 27, 1850.

[Dr. Given has also extensively employed the cod-liver oil in the Eastern State (Pennsylvania) Penitentiary, for gaol cachexia, and, he informs us, with great advantage. We hope to be able to present the results of his experience in the next number of this Journal.]

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13. *Kousso.*—Dr. Crisp mentioned, at the recent anniversary meeting of the Prov. Med. and Surg. Association, four cases of tænia solium, in which he had used the kousso. Two were cured, and the other two were failures. He questioned whether it were worth more than turpentine, except that it was milder in its action.—*Med. Times*, Aug. 16.

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14. *Case of Epilepsy treated by Tracheotomy.* By W. H. Cane, Esq. ("Proceedings" of Royal Med. Chirurg. Soc., June 24).—Dr. Marshall Hall had suggested on several occasions, and especially in a conversation with Mr. Cane, that as the attack of epileptic or other *convulsion* implied closure of the larynx, with expiratory efforts, the attack of convulsive epilepsy would be prevented by tracheotomy. Mr. Cane was summoned, on Feb. 1, 1851, to the case of a boatman, aged twenty-four, who had become subject to violent fits of epilepsy, one of which had just occurred in so extreme a form as to leave him in a state of deep apoplectic coma and asphyxia, inspiration being performed only "by seldom and short catches, whilst the veins of the head and neck were everywhere visible and greatly distended." This state had continued nineteen hours. "Feeling convinced," Mr. Cane observes, "that the patient must shortly expire, and that the root of the evil was in the closure of the larynx, I at once proceeded to open the trachea, a matter of no small difficulty, on account of the twisted state of the neck, the engorged state of the vessels, and the constant action of the muscles. The operation of tracheotomy was performed, and the tracheal tube is kept in the trachea to the present time. The relief to the patient was immediate; the air passed into the lungs, the state of spasm subsided, with the turgid condition of the head and neck, and the patient soon recovered his sensibility. This was not the only gratifying result; although the poor man had experienced his epileptic seizures in increasing violence during seven or eight years, and recently thrice a week, he had, on April 1st, during two months, had no return of them. More recent accounts of the patient, who is now in Staffordshire, confirm the former report; the tube is still kept in the trachea, and the epileptic seizures have not recurred.—*Lancet*, July 12, 1851.

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15. *On the Causes, Consequences, and Treatment of Inflammation of the Veins.*—Henry Lee, Esq., in an interesting paper in the *London Journal of Medicine* (March and July 1850), endeavours to establish the following points in reference to the pathology and treatment of inflammation of the veins:—

1st. That inflammation, both of the veins and of the capillary vessels, usually depends upon irritation, communicated to them through their contents.

2dly. That pus is capable of producing such irritation when detained in contact with the lining membrane of the veins; but that it may be conveyed along their channels, without leaving any trace of its passage.

3dly. That pus, under ordinary circumstances, cannot circulate in living vessels, in consequence of its power of determining the coagulation of the first portions of the blood with which it is brought in contact.

4thly. That when pus is carried along a vein, it is in consequence either of the disturbance of the coagulum which has first detained it, or of the blood having in some measure lost its natural power of coagulation.

5thly. That when, in consequence of either of these conditions, pus does find its way into the circulation, it may nevertheless determine the coagulation of the blood in its passage, either in a different part of the same vessel, or in distant parts of the system.

6thly. That when the coagulation occurs in a distant part of the body, it is usually observed in capillary vessels.

7thly. That when it occurs in a large vein, it may affect the circulation through the whole of the vessels which supply it; and that if, for example, a coagulum be formed in, or extend to, the common iliac vein, the obstruction produced may give rise to all the symptoms of *phlegmasia dolens*.

8thly. That, under any of the circumstances above mentioned, bleeding and the use of mercurial medicines are of at least doubtful efficacy.

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16. *Effects of Molluscous Tumours when developed in the External Auditory Meatus.*—Mr. Toynbee exhibited to the Pathological Society of London (May 20, 1851) some specimens illustrative of this.—Although the existence of molluscum contagiosum in the external meatus has not been recognized by any former writers on diseases of the ear, it is far from being a rare disease, especially in elderly persons. It is found in all parts of the tube, but the situation where it is most common is the superior and posterior part, near to the attachment of the membrana tympani. The preparations laid before the Society show the effects of these molluscous tumours—1st, on the meatus; 2dly, on the tympanic cavity.

1st. *The meatus.*—When situated at the posterior part of the meatus, these tumours, if their progress be unchecked, cause absorption of the layer of bone separating the meatus from the mastoid cells, and they frequently extend into the mastoid cells, of which they occupy a considerable space. When a tumour is placed in the floor of the meatus near to the membrana tympani, the bone between the tube and the jugular vein is sometimes absorbed, and the vein is separated from the meatus by only a delicate membrane.

2d. *The tympanic cavity.*—It has already been stated that the molluscous tumours are frequently developed at the superior and posterior part of the meatus, near to the membrana tympani. As they increase in size, they cause absorption of the superior part of the membrana tympani, and of the adjacent bone, thus producing a large opening into the tympanic cavity. Through this opening the tumour extends, and, increasing to the size of a small hazelnut, it not only occupies the greater part of the tympanum, but it sometimes extends upwards, destroys the layer of bone separating the tympanic cavity from that of the cerebrum, and comes into contact with the dura mater, which also partakes of the disease. In one case the tumour had caused disease in the lower wall of the tympanum, and the jugular vein was laid bare. The layer of bone between the carotid artery and tympanum was also carious.

When the tumours have increased to such a size as to cause irritation to the dermoid layer of the meatus, catarrhal inflammation ensues, attended by considerable pain; such cases have no doubt hitherto been comprehended under the general term otorrhœa.—*London Med. Gaz.*, June 1851.

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17. *Case in which the Liver contained Air.*—M. Piorry recently met with a very singular appearance in the body of a man, æt. 21, who died at La Charité

of very confluent variola, the colon, after death, presenting numerous ulcerations, which only affected the mucous membrane. The circumstance that attracted attention was the fact of the liver, on percussion, transmitting a sound, as if it contained air. Neither it nor any other part of the body had undergone putrefaction. On cutting into the liver, it was found to have lost its granular appearance. On pressure, it crepitated like lung, and swam in water; if squeezed, bubbles escaped from it, and it then sank. In other respects it appeared healthy. The *vena cava inferior* also contained air; but the *vena portæ* was not examined. There were no signs of emphysema, but some gas was observed near the pancreas and kidney. In consequence of the numerous intestinal ulcerations, which, from the hemorrhages that occurred during life, may be supposed to have opened some vessels, gases might possibly have penetrated into the ramuscules of the vena portæ, and thus arrived at the liver. However this may be, had the organ been percussed during life, it must have been mistaken for lung; and when cut into after death, a superficial examination might easily have led to the same error.—*British and Foreign Medico-Chirurgical Review*, July, from *Gaz. des Hôpitaux*, 1851, No. 24.

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18. *On a New Epidemic Exanthem.*—Dr. Laycock has published, in the *Medical Times* for March 8, 1851, a clinical lecture on an affection which he considers as a *new epidemic exanthem.* About a year and a half since, he first observed the disease among the patients and domestics of a large private asylum; and even the children of the matron suffered. The robust were affected as well as the feeble. Concurrently with the boils, there was sometimes an ecthymatous affection of the skin. The disease was not fatal in any case. Dr. Laycock believes it to be epidemic over a great part of England.

The disease is mainly characterized by a succession of boils on various parts of the body, of various sizes, from a bean to a walnut. First, there is a small hard pimple, with, perhaps, a vesicle or circlet of vesicles on the top. This itches; the top is scratched off; when it is found that there is a small tumour in or below the derma, which becomes larger, inflamed, very painful, and at last suppurates, with an erysipelatous blush about it, and in bad cases with phlyctænæ. A number of these occur in succession on various parts of the body, but principally on the forearm, leg, and nates. Occasionally there is a vesicle only, which quickly puts on the appearance of ecthyma; and in one case at the York Dispensary (in a child), there was just one large livid-looking phlyctæna, as large as a crown piece, very like gangrene. Sometimes there is a solitary boil, large, angry-looking, and mischievous as a carbuncle. An aged lady, who came under his notice, had one of these on the mons veneris; and sometimes even the minor specimens are not to be distinguished from carbuncles. Very often, after they have sloughed and healed, they leave an indurated condition of the skin and subcutaneous cellular tissue.

The eruption, whatever form it may assume, has a definite period of duration, and continues from two to six weeks. The furuncular form is not always more chronic than the ecthymatous, but is so for the most part; the exceptions being those cases in which the patient is cachectic. It is not, however, dependent at all upon a cachectic condition, for it occurs in robust men and in very healthy children. Nevertheless, the cachectic suffer more from the disease, and perhaps they suffer also in greater numbers. In some instances we may clearly trace the localization of the boils to some local cause; for example, a crop will break out round a blister, or round another boil, if it be poulticed much, or round a burn. In one case, they occurred on the neck, thorax, and upper arm of a young woman who had irritated her throat by the inunction of the iodide of potassium ointment; and in another, chronic psoriasis seemed to have been the exciting cause. Dr. Laycock suspects that any local irritation of the skin is sufficient to induce the disease in an individual within the sphere of the epidemic.

Dr. Laycock believes that this eruptive disease occurs under the following forms: 1. There may be a solitary boil, presenting, for instance, a phlyctenoid character, with inflammation of an erysipelatous character extending down the arm to the wrist, and upwards towards the shoulder. 2. A solitary phlyctæna, or several. 3. Several boils, varying in size and character up to carbuncles, without any other cutaneous disease. 4. Boils, with ecthyma, eczema, or impetigo; but much more frequently with ecthyma. 5. The boils differ, in leaving or not leaving behind them an induration of the skin and subcutaneous tissue.

Dr. Laycock is of opinion that this epidemic is essentially a blood-disease, caused by some specific poison. What that poison may be, and what its origin, are altogether uncertain; it may be from the atmosphere, or from our food, as American flour, for example, or from the flesh of tainted cattle, or may be generated within the body by atmospheric peculiarities; or it may be a contagious *materies*, originating in the first instance with brutes, and then transmitted from one individual to another. If it be the latter, as seems most probable, then he thinks it is *strictly* contagious, like glanders or syphilis, and not infectious also.

During several months past, there has been an epizootic prevalent in Yorkshire, affecting horses and cattle. In the latter, the mouth and throat are so inflamed that the animal cannot eat, or the hoofs come off. The same disease is prevalent in Shropshire. It seems to correspond with the epizootic *Maulweh* and *Klauenseuche* of the Germans, and is accompanied with an aphthous eruption. According to Levitzky, persons attending on cattle attacked with this disease, or something similar, which he terms, "angina catarrhalis," were affected with an inflammatory *rheumatic* fever (not with an angina catarrhalis), accompanied with a pustular eruption, and abscesses and ulceration of the lower extremities.

In treating this furuncular disease, little more is required, in ordinary cases, than to let it run its course, which is completed in three or four weeks. An occasional purgative and warm bath will be useful in allaying inflammatory action, and perhaps diminishing the number of boils. Two grains of calomel with rhubarb, colocynth, or scammony, twice a week, will be useful: in the more severe cases, the mineral acids and vegetable bitters must be added, and a good diet; the liquor of the amorphous sulphate of quinine in full doses, with dilute nitric acid, has been found useful. In all cases, however, purgatives and the warm bath are beneficial. Cataplasms, fomentations, etc., are not of much service. So soon as suppuration is established, a free incision should be made into the boil, and then the water-dressing applied: care should be taken that the pus do not flow on the adjoining skin, and (as in erysipelas) that the sponges, etc., be not used by other patients or persons.

The editor of the *Lond. Journ. Med.* states that boils have been unusually prevalent this year in London and the neighbourhood, and in Philadelphia we have observed a very remarkable number of cases of this affection, as also of carbuncles and of whitlows.

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19. *On Eclampsia Nutans.*—Dr. Faber relates two cases of this curious affection. The *first* occurred in a girl, æt. 3, who, though pale and weakly, had not suffered from any decided disease until three months before, when she complained of headache and sleepiness, began to squint somewhat, and sometimes to nod her head towards the left side. This nodding action was at first continued only for a few minutes three times a day, during which the head was making constant salutation-movements. After a while the attacks increased in frequency, and were fearfully violent. The child was much disposed to sleep; and became on waking convulsed in the extremities, this passing on to complete epilepsy. She was backward in mental development, and had an idiotic expression of countenance.

The *second* occurred in a boy, æt. 6, who showed good capabilities for instruction up to the commencement of his sixth year, when he fell into the water. He remained in bed several days after in a drowsy state, and was never again so lively and quick. After a while, he was observed to nod his head for two or three minutes, and this several times in the course of the day, the motions being sometimes so rapid that eighty could be counted in a minute. They commenced at first slowly, like real salutations, but gradually increased in quickness, when the child would fall back in a passion. During the time they continued, his face was distorted, and great fatigue was induced. He was aware when the attacks were coming on, and his consciousness continued during their prevalence. He was pale and feeble, and had acquired a peculiar, stupid look.

The reporter inquires whether this is a partial chorea or a peculiar form of spasm, and whether it is dependent upon morbid conditions of the brain or spinal marrow. The most careful examination of his two cases did not enable him to decide. No pain or tenderness about the head or spine was discoverable, and nothing abnormal in the general condition. Various applications and medicinal substances were resorted to, with but very little success—iron seeming the most useful among them.—*British and Foreign Medico-Chirurgical Review*, July 1851, from *Schmidt's Jahrb.*, vol. lxvii.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

20. *On the Application of Anæsthetic Remedies to Surgical Purposes.*—The *Dublin Medical Press* (March 12th, 1851) contains a very interesting paper on this subject, communicated to the Surgical Society of Ireland by Dr. Fleming, which we conceive to be of so much practical importance, that we shall give a very full analysis of it.

In considering the selection of cases for anæsthetic agency, Dr. F. remarks, "The state of the system at large must be borne in mind, and also the special character and locality of the injury or disease which it may be the object of the surgeon to remedy. Those two circumstances should form most important elements in his decision, as upon the accuracy of that decision depends the successful or satisfactory application of the agent—nay more, perhaps the life of his patient. Due importance should be always attached to them—careful examination should be made as to the presence of any structural lesion of any vital organ—habits of previous life should be inquired into—peculiarities of constitution should be ascertained—and functional derangements, not fairly attributed to the peculiar nature of the case, should be carefully investigated. Every day's observation proves the importance of those particulars as regards the general condition of the patient; and it will be seen, in the sequel, how requisite it is equally to bear in mind the local features of the injury or disease present. Yet, it is a pleasing reflection that occasional deviations from such stringent rules may be made without injurious consequences, even in reference to the general signs of disease, as would appear from the following remarkable instances:—

"In September, 1848, a young man, aged about 20, reduced to the most extreme state of emaciation and exhaustion, and in the advanced stage of phthisis, accompanied with cavities in the upper part of each lung, entreated Mr. Cusack to amputate his thigh under the most distressing and uncontrollable sufferings. The knee-joint, for a lengthened period the seat of chronic strumous arthritis, now presented its cavity exposed from the sloughing of the whole of its anterior coverings, and one enormous sheet of ulcerating surface was to be seen, with the carious ends of the bones projecting through it. The torture of the poor fellow was frightful to witness. The slightest motion of the limb, the slightest touch of the surface, produced the most agonizing cries. His wish was ultimately acceded to: he was removed from his ward to the operation theatre under the anæsthetic influence, and under it a painless amputation was performed without any injurious results, either immediate or subsequent, the pulmonary symptoms not having been ostensibly, in the slightest degree, affected by it.

"Another case is worth noting, in which benefit was derived from its partial adoption, although a very important organ was implicated.

"In May, 1849, a young man, between twenty and thirty years of age, of athletic frame, and in apparent good health, betrayed maniacal symptoms of a nature to demand personal restraint. It was indispensable to put on a strait-waistcoat, and any attempt on the part of the attendants to do so, no matter how devised, had failed, and always produced most violent paroxysms of rage, during which every mischief was threatened. It occurred to me that, under anæsthetic influence, the object might be accomplished. I induced him to lie down, and proceeded in the ordinary way to administer the agent. He became tranquil and comparatively composed and manageable, though he continued to speak equally wildly and incoherently. Watching an opportunity, I now desired the very same attendants to proceed to the ordinary mode of personal restraint. He submitted to the details without the slightest opposition or remark, and did not subsequently express any annoyance from it, the symptoms of his disease being apparently uninfluenced in other respects.

"A third case may be added, where, although the age of the individual was far advanced, and deranged cardiac action existed, yet complete anæsthesia was superinduced and kept up for a lengthened period with impunity.

"A man, having all the external characteristics of perfect health for his advanced period of life, verging on eighty years, applied to me with symptoms of calculus in the bladder. I sounded him, and finding a stone, procured his admission into Steevens' Hospital. It was finally decided that the case was one favourable for lithotomy, and the operation was performed by Mr. Colles. The question of anæsthesia became an important one, as well on account of his period of life as of the fact that there was much irregularity of the pulse. By the ordinary physical examination, no sign of any structural lesion of the heart could be detected, either after hurried exercise or when at rest. The man was a very placid creature, and willing to submit to any operation for his cure. During his stay in the hospital, he witnessed the effects of anæsthesia in varied patients who had undergone operations, and he stated to me that he was anxious to submit himself to the same influence. I made an experimental trial two days before that arranged for the operation, and found I could succeed without influencing materially the pulse. I did not press the agent, and allowed its effects to pass off rapidly. He felt no uncomfortable sensations from the experiment. He moved about, ate his meals, and slept, as usual. On the morning of the operation he was calm and placid as heretofore, and felt no apprehension of its effects or of its results. He dressed himself, walked up to the operation theatre, entered into conversation with those around him, and placed himself on the operation table without the slightest murmur. An operation, necessarily tedious from its complicated details, was undergone without a particle of suffering, and this aged man awoke, if I may so express myself, from his anæsthetic sleep, with a countenance as calm as if no operation had been performed, and with a pulse as firm as previous to it.

"I have selected these as extreme cases, illustrative of the opportunities we may avail ourselves of to alleviate human sufferings, even under the untoward circumstances I have specified; but it should never be forgotten that such are exceptional cases, and of a class requiring the most careful circumspection, and that, as a general rule, we should avoid those where the slightest deviation from the normal condition of any important organ presents itself. Assuming, however, that no such objection exists, many opportunities present themselves of witnessing the beneficial effects of this valuable assistant to the surgeon in the diagnosis and treatment, operative or otherwise, of injury and of disease.

"I could enumerate many instances illustrative of this. In dislocations, in amputations, primary and secondary, in the removal of tumours in varied situations, the removal of the breast, of the testicle, in operations on the urethra, in hernia, in necrosis, in lithotomy, in the extirpation of the eye, in numerous plastic operations, and others of a comparatively minor character, cases could be brought forward in which I adopted it, and an equally considerable number and variety could be reported from the communications I have received on the subject. However, it would be inexcusable to occupy the time of the Society with their details; and especially as many of those cases are familiar to members present, and no very remarkable peculiarities having presented themselves in the majority, I should prefer special allusion to those alone which may answer the practical objects in view, as we proceed.

"Independent of the cases above noted, I might mention others in which anæsthesia was had recourse to, but in which, as far as my experience at present goes, its adoption is, to say the least, injudicious, as well from the seat of the disease requiring surgical interference, as from the necessary position of the patient during the operation. In fistulæ in ano, and in hemorrhoids, where operative proceedings are called for, I am by no means satisfied with its results. I doubt if the best position for the patient in such cases is not leaning forward over a bed, table, or chair, and very often he is necessarily not a passive agent during the operation; if such be the fact, the objection to the use of anæsthetics is obvious.*

"In operations about the mouth, such as the removal of the upper or lower jaw, either partially or wholly, the propriety of anæsthesia appears to me to be more than questionable, for reasons similar to those already mentioned, quite independent of the risk of the attendant hemorrhage; and this same remark is applicable to any operation implicating the cavities of the mouth or nose. In some of those cases, particularly that of the removal of the lower jaw, I have imagined that the attendant pain has been mitigated materially by partial inhalation, both previous to and during the stages of the operation, but it requires great caution, and the nose is the organ through which the vapour of the agent must pass, it being absolutely idle to attempt it through the mouth. I might instance cases in ophthalmic and in obstetric surgery where equally important obstacles exist to the safe and successful induction of anæsthesia. These cases, however, have attracted the attention of far more competent authorities, and it is not requisite that I should do more than allude to them. I have used anæsthesia satisfactorily in a case of extirpation of the eye by Dr. Jacob at the Baggot-street Hospital, and in a similar operation, in private, by Mr. Wilde. In many other operations of his, such as painful plastic operations and operations on the face and lachrymal appendages, it has been of immeasurable value; but in those operations involving the interior of the orbit or the globe of the eye, such as strabismus and extraction of cataract, where a certain amount of assistance on the part of the patient is requisite during the several stages of the operation, I fully agree with my friend Mr. Wilde as to its inapplicability."

With regard to the *mode of administering the vapours of anæsthetic substances with the view to securing their salutary effects*, Dr. F. observes that "certain rules must guide the surgeon, which should be observed as rigidly as in the performance of his varied operations, in order that he may be prepared to meet any contingency. He should have a clear and distinct knowledge of the agent to be employed, and be fully satisfied of its purity—he should have a simple apparatus for its administration—he should consider the actual condition of the patient, as to the state of his health and strength at the time of exhibition—and selecting a proper position, free from constriction of any kind, he should have at hand remedies to counteract any injurious effects which may supervene. In all those details he cannot be too particular, if he wish to provide against accident, upon the non-occurrence of which he can never calculate with any certainty, in any given case. I may hence be permitted to enter somewhat at large upon this part of the subject. Chloroform, the agent at present in use for anæsthetic purposes, is familiar by name to all. It has now borne the test of more than three years' experience, and for it we are indebted to the untiring energy of Professor Simpson of Edinburgh, whose name can never be mentioned but with gratitude and respect. The advantages which this agent possesses over that first suggested, it is unnecessary for me here to specify. Suffice it to say, that the surgeon who contemplates the induction of artificial anæsthesia should accustom himself to the appearance of this agent, to its peculiar smell, and to those simple tests of its purity which are always within reach. Its specific gravity in its fluid state, and especially in a state of vapour, he should never lose sight of, all those and other particulars being of great practical value. I never use chloroform without examining it by the simple tests of litmus paper and water, and if at hand, a solution of nitrate of silver. If the former remains unaffected by the vapour, and if some of the specimen dropped into a test-glass containing either of the latter fluids, occupies the bottom of the glass as a clear transparent globule, I am satisfied that it is genuine, or at all events suited for practical purposes. But if, on the contrary, the litmus paper is reddened or bleached, and if the globule appears opalescent, or like a muddy lens, I reject it as adulterated, and unfit and unsafe for use. I mean not to attach to those tests any undue amount of preference. I am aware that there are others, but they are more adapted for the laboratory and for the chemist, and I can add, with confidence, that those I specify will answer all practical purposes. I place much confidence in them, and they are certainly more within the reach of the practical surgeon than that suggested by Professor Gregory of Edinburgh, and, as far as I can learn, they are equally valuable. That an acquaintance with these details is requisite, will be obvious from the following facts, which I select from many others I could enumerate. They are illustrative of the value of attention to the specific gravity of the vapour of chloroform, and to the smell of chloroform, with a view to its effects.

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* I have occasionally found that the seat of disease or injury is, when under anæsthetic influence, as if cognizant of what is contemplated, or, in other words, that its organic sensibility is not destroyed, and it is hence absolutely indispensable in some operations that the surgeon should be prepared for this, to avoid any rash movement on his part or on that of his patient. Thus, I have seen the rectum protruded, in cases of disease engaging it, when the patient was perfectly unconscious, and all tactile sensation blunted. In a similar state of the system, I have seen the upper and lower extremity, the seat of the operation, thrown into automatic movements, whilst the remaining portions of the muscular system were tranquil and motionless; and in sounding for the stone, and in the stages of the operation of lithotomy, I have seen a regular paroxysm of what is termed a fit of the stone when the patient was perfectly anæsthetic, as far as the conclusive signs of such state are concerned. I have witnessed, in a case of congenital phimosis, in a young officer, which he wished to be removed, the penis thrown into a state of turgescence when the operation was perfectly impracticable until it subsided, and this although consciousness and sensation were obliterated. I must here add that such conditions of the organ I never before witnessed; but I have repeatedly witnessed unsatisfactory anæsthetic effects where it was the subject of operation, and especially where the parties were inveterate smokers or drinkers. A curious coincidence once occurred in the case of a dog of the bull-dog tribe, who had an enormous growth of warty excrescences under the prepuce and around the glans, identical with those occasionally met with in the human subject. The dog was brought to our talented veterinary surgeon, Mr. Fergusson, for advice, who, whilst the dog was under anæsthesia, removed them, the penis being so perfectly rigid that he was enabled to do so without any section of the prepuce.

"A boy, aged about 16 years, was the subject of a morbid growth of skin, which hung in loose unwieldy folds on his back. An operation was decided on, for its partial removal. A few days previous, I subjected the boy to the vapour of chloroform with satisfactory results. The operation was necessarily performed with the boy lying on the abdomen; I administered the chloroform without reflecting on its high density; the boy was himself aware of the difference in the effects on this occasion, and there was no relief to his pain. In the after stages of the operation his position admitted of change, and with it the effects of anæsthesia were decisive. Again, a fine boy, aged about 10 years, was supposed to labour under the symptoms of stone in the bladder: he was brought to town for advice; at two separate sittings he was sounded, under the full influence of chloroform, which I knew to be genuine. The specimen was exhausted, and I was obliged to procure some, in a hurry, on a third occasion. The boy, on smelling it, at once perceived a difference, could hardly be induced to inhale it, and its effects were so distressing that he never afterwards would submit himself to the anæsthetic influence. On subsequent examination, I found that the smell was that of naphtha, and that the specimen had been made from naphtha."*

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* Whilst these pages were passing through the press, a case occurred which gives additional proof of the importance of attention to the above particulars.

A servant girl had, by accident, a portion of a fine sewing needle impacted in the palm of the right hand, and previous to the attempt at its removal, I administered chloroform. My supply being small, my friend Dr. Hardy brought me some which he had

As regards the dose of the agent to be administered, Dr. F. remarks "that he is a rash practitioner who would presume, even on the most extended experience, to overwhelm his patient with such a powerful and such a treacherous drug, irrespective of the case before him. The dose commenced with should always be a minor dose, certainly not exceeding one drachm, and it should be increased according to its effects. The most desirable anæsthetic sleep I have ever witnessed, I have produced and I have sustained, during a lengthened period, with a quantity of chloroform not exceeding one drachm, whilst eight times that quantity have been wholly inefficient under apparently similar circumstances. I have mentioned that the condition of the patient, as to his state of health and strength, and his unconstrained position at the time of inhalation, form important items in the rules which should guide us in securing salutary effects from the agent I view them as all-important, and I am of opinion that many of the unfavourable occurrences which have taken place elsewhere are mainly attributable to oversight as regards them. The infant, the child, the adult man in rude health, the aged man, the delicate female, and the man prostrated by injury or by disease, obviously require separate consideration; and the value of such distinctions will appear when the effects of anæsthesia are taken into account, where such debility and exhaustion are present, and where they are accompanied with feeble cardiac action. The case which I have already alluded to, and the particulars of which have been so honourably communicated to me to lay before the Society, are so conclusive on this point, that it is not requisite to do more than to refer to them. They will serve as a lasting lesson of caution to the surgeon under similar circumstances, at least in this country."

With respect to the position in which an anæsthetic agent should be administered, Dr. F. prefers the recumbent or semi-recumbent, either on the side or on the back, and he says, "I would never recommend its use in any other, unless there was every provision, beforehand, to place the patient instantaneously in that posture, if requisite. I would strenuously oppose any other where much delicacy or debility was present; and I would particularly insist on every article of dress being perfectly free from any constriction, especially about the neck and chest. In one instance which I witnessed, death was all but produced by the neglect of unloosing the stays of a female, and serious results arose from similar neglect in the neckcloth and shirtneck of men. In the ordinary operation for phimosis being performed by Mr. Wilmot, whilst the patient was in a sitting posture, I was administering chloroform, when I observed the man's face become pallid and his head droop. There was absolutely no pulse to be felt at the wrist, and even the action of the heart had apparently ceased. Had he not been rapidly, but cautiously, thrown into the horizontal position, to assist ordinary stimulants, he must have died. A lady who had her forearm amputated for malignant disease at the wrist mentioned to me that, preparatory to the operation, she was placed sitting in a chair, and subjected, in that position, to anæsthetic influence, and that a train of symptoms, accompanied with the most frightful prostration (but with perfect consciousness), supervened, in consequence of which the operation was deferred, and only proceeded with at her urgent request, after four or five hours delay, whilst she was in bed. Cases, doubtless, may occur where patients are in rude health, and where the peculiar

lately procured at one of our first establishments in this city, and which at the time was considered to be genuine. He had never opened the bottle, which was provided with a glass stopper, and a leather cap over it. I found its smell pungent and disagreeable, and quite different from that of pure chloroform; it was yet perfectly clear and transparent. When inhaled by the patient, it could hardly be tolerated, and it produced incessant spasmodic cough. It answered, however, to keep up the anæsthetic effect produced by the first specimen. It was afterwards found that litmus paper was reddened by it, and that free hydrochloric acid was present, and, moreover, that the same change had taken place in the contents of the bottle at the laboratory from which it was supplied. The impression is that some decomposition had taken place. This fact shows the necessity of testing every specimen of chloroform immediately before administration, as it appears that a perfectly genuine article may undergo important chemical changes. It may be a good precaution to keep the drug for immediate use, in small stopper bottles, with glass caps, and to guard them against exposure to the light.

nature of the case may sanction the selection of the sitting posture; but if so, let the surgeon recollect that he can never calculate on what contingency may arise, and let him provide accordingly, and, above all, let him be circumspect when any symptoms of even an approach to delicacy or to debility manifest themselves. Many illustrations could be brought forward confirmatory of the importance of such caution, but I feel it is not requisite to do so. I may mention, incidentally, that I never hesitate to put children under the anæsthetic influence in the mother's or in the nurse's arms, but that, as the conclusive effects appear, I at once place them recumbent.

"In speaking of the condition of a patient subjected to anæsthesia, I have alluded to that extreme state of exhaustion attendant on returning collapse from injury, or on protracted suffering from local disease, as a matter of vast moment for the consideration of the surgeon. It must never be lost sight of, and it is far better that he should never think of anæsthesia if he does not bear it prominently in view. If he adheres to one of the injunctions laid down, as regards the state of the stomach of his patient, I cannot almost understand how he can escape some fatality. I am fully alive to the importance respecting the impropriety of inducing anæsthesia immediately after a meal, but I am equally satisfied that even such a condition is less hazardous than the opposite extreme, and that in delicate females, and in persons exhausted by long-continued suffering, the very consequence sought to be avoided is rather encouraged. I have met with very unmanageable sickness of the stomach after fasting, purposely protracted with a view to the inhalation of chloroform. It is, therefore, well to avoid it. I may instance a case of congenital cataract operated on by Mr. Wilde. The subject was a delicate girl aged about 12 or 14 years. Sickness supervened during the steps of the operation, although she had had no food from the previous evening, and, moreover, the anæsthetic condition was by no means satisfactory.

"The first case of this kind in which it struck me that salutary anæsthetic effects might be secured, occurred in one of the constabulary force, a patient in Steevens' Hospital. He was the subject of disease of the knee-joint, advanced to a stage to demand amputation, and was in a state of such extreme exhaustion that the operation was not free from danger. It was most desirable to save him the shock and pain of it, and yet his condition appeared to militate against the use of chloroform, for which he was most anxious. It struck me that some dietetic stimulant might answer as a protective, and I gave him, about half an hour before the operation, some brandy beat up with the yolk of egg. The chloroform was now administered in his ward, previous to his removal to the operation theatre; the limb was removed by Mr. Wilmot, and he was replaced in bed, without knowledge or pain throughout the whole proceeding, and in a condition not appreciably different from that which preceded it. At St. Vincent's Hospital, not long since, immediately before the operation, by Dr. Bellingham, of the removal of a very painful disease of the great toe, I adopted the same expedient in a weakly woman, aged beyond 50 years, preparatory to the exhibition of chloroform, and the general remark was, that the anæsthetic effects were satisfactory throughout, and that the strength of the woman was rather improved than otherwise after the operation, although it was somewhat protracted. The case of advanced phthisis, already noted, was treated in the same manner, and others could be brought forward confirmatory of the value of such proceeding. I may, then, venture strongly to recommend to the profession, as an excellent protection in those cases of prostration or of debility in which the use of chloroform may not be otherwise contraindicated, the administration of some cordial stimulant in a small compass, before the operation. I have never witnessed the slightest attempt at sickness produced by it, and it has always acted as an efficient and safe stimulus.

"In addition to the above precautions, I would recommend the surgeon always to provide himself with a sponge and basin of cold water and a bottle of ammonia. They, with a stream of cold air about the patient, are the best remedies with which I am acquainted for controlling the anæsthetic effects of chloroform within safe limits, and by their alternate use I never hesitate to prolong those effects, and to renew them when necessary, until the object of the surgeon is completed. I may instance a case of femoral hernia, complicated with ascites, in a man aged beyond 40 years, a patient of Dr. Bellingham's, where operation was required, and where the steps of the operation were necessarily tedious: here the anæsthetic influence was thus kept up for nearly an hour, in the intervals of the exhibition of the agent, and no inconvenience was experienced. I would, then, recommend them as indispensable adjuncts before an operation is commenced, as they may be suddenly required, and may not be so easily commanded during its performance. I never omit them."

Dr. F., like most observers, prefers the agent to be administered gradually; that free atmospheric air should be alternated with its vapour; that, throughout the whole period, care should be taken to admit it in proportion to the effects produced; and that progressive rather than sudden anæsthesia should be aimed at. "The surgeon," Dr. F. remarks, "who witnesses the effects of those anæsthetic remedies, no matter how warm an advocate he may be for their use, cannot conceal from himself the practical fact, that the most extraordinary, the most unaccountable uncertainty attends their administration, and that this is, by no means, always referable to any impurity in the agent employed. I have used chloroform very extensively, and in almost every variety of case. I have used it in the infant, in the child, in the adult, and in the aged. I have procured it from the best sources in the city, and from none, I must say, more uniformly certain as to its effects, than from Mr. Hunt. I have, moreover, procured it from Duncan and Flockhart of Edinburgh, through the talented advocate for, and originator of it, and I can unhesitatingly assert that, as regards its effects, I never could calculate with any certainty as to what they would be in any given case. I admit, as has already been alluded to, that they are much influenced by purity of agent, and by varied character of constitution, and of injury, or of disease; but I have fruitlessly attempted to establish any unerring data upon which their actual nature can be anticipated, either in order of occurrence or of intensity.* Without entering too much at large upon them, it will answer all practical purposes to consider them as premonitory, conclusive, and incidental. The two former being usually present, the last not necessarily so; the premonitory being ushered in by symptoms extremely variable, but generally indicative of momentary excitement of some one kind or other, and such often suddenly subsiding when the conclusive or true anæsthetic set in. In not a few instances, however, the premonitory continue persistent, and are accompanied with a state bordering on a regular epileptic attack, consciousness being completely annihilated, and the most extreme vascular turgescence being superadded to frightful muscular movements. Under ordinary circumstances, this stage of excitement is more manageable, and, although some little restraint is requisite, yet, by slight control, it passes off.† If such train of symptoms were not accompanied with any severe struggling or opposition on the part of the patient, I would recommend the persistence in the application of the agent until the conclusive effects were produced; but if otherwise, I would at once suspend its use. I would encourage the patient: I would reason with him, and he can often be reasoned with, and at the same time I would steal on the application, keeping the apparatus near the face. In delicate females and in children, I would be particularly circumspect in observing those precautions. I would deprecate violence of any kind: and if by persuasion, or by unobserved manipulation, I did not succeed, I would prefer suspending the inhalation altogether, to rashly pressing it, when the patient appeared to be inimical to its full or salutary influence. During the cries of children, you will often succeed most satisfactorily, by playing carelessly with the sponge or other apparatus before them, when you will find that they are imperceptibly brought under the anæsthetic influence.

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* It is, moreover, a fact worth recollecting, that the same uncertainty attends the repetition of the anæsthetic agent at different periods. I have heard persons calculate with much confidence upon producing most satisfactory anæsthetic effects, because in experimental trials, before an operation, they had succeeded; yet, on the operation table, the very opposite was the result.

† I have witnessed some few cases where absolute violence was attempted under such excited condition. In one, of an officer being operated on for fistula in ano, he jumped up off the sofa on which he had been placed, and put himself into a boxing attitude, to the no small alarm of his surgeon. It is surprising, however, how easily controllable persons are under such circumstances, and there is not the slightest recollection of the occurrence.

"Premonitory symptoms, such as the above, are occasionally totally absent; not a trace of them is to be observed. Perfect anæsthesia is as if instantaneously produced, whilst again in other cases they are merely transitory, and the conclusive supervene. Those are so characteristic as to require no special description. To the medical practitioner, they are fully indicative of the symptoms of cerebral congestion, and oppression from ordinary causes, familiar to him in practice, and he cannot witness them without somewhat of alarm. They are, in appearance, very formidable, and the surgeon cannot divest himself of a certain degree of anxiety unless he possesses an amount of rash confidence, which is always to be deprecated. When this train of symptoms manifests itself, he should at once suspend altogether the use of the agent—allow free access of air to his patient—keep up a perpetual current of reflex action, if I may so express myself, by constantly sponging the face with cold water—and renew, or otherwise, the agent according to the necessity of the case, by watching the stage of the operation, and especially the state of the circulation, as evinced by the pulse and countenance, the condition of which must guide him as to the use of ammonia, or fresh inhalation of the agent.

"Such are the conclusive or full anæsthetic effects as usually described and witnessed; but the most perfect anæsthetic sleep, and that which it would be most desirable always to establish, may exist in the absence of that apoplectic state which has just been alluded to. The countenance is calm and placid: there is an absence of vascular turgescence, capillary or otherwise; and the respiration is so tranquil that it is scarcely perceptible. Of such I have witnessed numerous instances, and some where, although tactile sensation was completely blunted, yet consciousness was not fully destroyed. Thus, a man had been operated on in one of the provincial hospitals in England for malignant cancer of the lip: a fungus sprung up from the cicatrix of the wound made in the operation, to which, after inefficient trials of other remedies, it was deemed prudent to apply the actual cautery. I put him under the influence of chloroform. The premonitory effects were mild, the conclusive placid. The man was conscious of the whole proceedings antecedent to the application of the iron at a white heat, and winced not in the slightest degree during it, remaining perfectly unmoved, and not suffering the slightest pain. I have seen the os calcis removed in a delicate strumous boy, in this form of anæsthetic sleep, when, during a dissecting operation, he was as motionless as a statue. I have seen Dr. Mayne perform Professor Syme's operation on the foot (an equally searching operation) on a young woman, under similar circumstances; and others I might extract from my note-book, and especially those of the autoplastic class, in which this desirable condition existed. This is the anæsthetic effect which it should be the aim of all to accomplish, as in it, there is no apparent derangement or distortion of function, so unpleasant to witness in that usually produced, and so justly deemed inimical to the general application of those remedies, but unfortunately it is most uncertain in its production. Were I to hazard an opinion, I would say it was more likely to supervene in those cases where there has been much suffering and much exhaustion from protracted disease of the bones or of the joints, as met with in strumous individuals, or after injuries, where much hemorrhage and collapse has occurred; and it is well, in a practical point of view, to bear it in recollection, as such *form of anæsthesia may rapidly and unexpectedly establish itself, the dose of the agent being often remarkably small which may induce it, and the ordinary premonitory signs not always preceding it.*[*] When the class of symptoms above alluded to super-

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[*] The following cases may be noted:—

A child, miserably delicate, and aged about six years, was brought to hospital in the advanced stage of hip-disease, with the additional deformity of flexure of the thigh on venes, the surgeon cannot be too cautious as to his mode of proceeding. The order of anæsthetic influence appears to be completely subverted, and he must, at once, suspend all operative proceedings until he satisfies himself about the condition of his patient. If he attempt to persist in pressing the agent, I would apprehend fatal results. He must stop its inhalation—he must substitute ammonia—he must admit fresh air, and adopt the restoratives I have already mentioned—he must watch the pulse and the colour of the countenance and lips of the patient, the latter of which I consider a very good guide to the state of the circulation and respiration—and he must only recur to the agent as the case may require it, alternating its vapour with that of ammonia.

"What I have termed the incidental effects of chloroform are not always present, but they are not the less deserving of attention. They may be primary, whereby I mean they may occur during the administration of the agent, or they may be secondary, and occur subsequent to it. They constitute those deviations from that usual course of anæsthetic symptoms with which surgeons are familiar, and must have been witnessed by any conversant with such. In persons in apparently rude health—in smokers—in persons long habituated to the use of opium, or its preparations—in persons of intemperate habits, either large eaters or drinkers, I have often observed that the course of anæsthesia is irregular.* In persons of a nervous or hysterical temperament, both males and females, it is by no means unfrequent to meet with those incidental symptoms. The premonitory, at the commencement, bear some slight similarity to those usually presenting themselves. The conclusive, in many such cases, *cannot be accomplished*, the system appearing to be absolutely unsusceptible of their supervention. Violent convulsions occur, sometimes engaging the whole muscular system. The contents of the bladder and of the rectum are discharged, and, in other instances, you have all the ordinary attendants on a regular fit of hysteria, such as laughing, crying, and sobbing respiration. During this train of symptoms, there is often a certain amount of consciousness, and if the special object of the surgeon be accomplished, be it operative or otherwise, all tactile sensation appears to be destroyed, as afterwards learned from the patient, although

the pelvis. The limb was extended under the influence of chloroform, the effects of which were instantaneous, and unaccompanied by any of the ordinary conclusive signs.

A boy, aged between 10 and 12 years, had his right upper extremity caught between the rollers of a paper machine. An extensive lacerated wound occupied the upper third of the arm, through which the fractured ends of the humerus could be seen, jagged and spiculated, some detached portions of bone also lying in the wound. The forearm presented, in the integuments and fascia, a longitudinal rent, through which torn portions of muscles protruded, the bones being bared, but not broken. The unfortunate boy was screeching with agony, and with dread at the approach of the surgeon. Under the most rapid and placid anæsthetic influence of chloroform, the limb was adjusted, and from day to day it was dressed, he being, at each dressing, placed in a similar state, and so freed from necessarily intense suffering, the quantity of the agent used on each occasion being under one drachm.

* That this untoward course of anæsthetic effects is not owing to any impurity in the drug, or in its mode of exhibition, may, I think, be assumed from the following case which I witnessed in the Royal Infirmary of Edinburgh in January, 1849, when passing through that city. The case was under the care of Professor Miller, whose advocacy for surgical anæsthesia, and whose valuable remarks on the subject, are, I should suppose, familiar to most members of the Society. A man, aged somewhat about 25 or 30, had dislocated his shoulder some weeks previous to his admission into the infirmary. He was carried into the operation theatre on a couch, and, in the horizontal position, was subjected to the influence of chloroform, in no very measured amount, from an ordinary towel, funnel-shaped. The usual conclusive effects were not produced; the man, when the means for the reduction of the dislocation were applied, resembled one labouring under an aggravated epileptic attack. His countenance was bloated and congested, and the automatic movements of the different muscles were very formidable. The dislocation did not appear to me to be reduced. I afterwards learned that this man was of most intemperate habits. I may add, that he quickly recovered from the effects of the agent, and that he stated to me he was wholly unconscious of pain, or the proceedings gone through.

there are strong external manifestations of extreme suffering. It is in this condition of the patient that the secondary incidental symptoms are often most alarming, if the surgeon is not prepared for their presence, and I am strongly disposed to the opinion, that the cumulative properties of the drug, as they are termed, manifest themselves more decidedly here than in any other case.

"There is nausea, vomiting, pallor of the countenance, and extreme debility, as evinced by a pulse hardly perceptible, by cold extremities, and a proportionate amount of cerebral oppression. I have not seen any fatal results from such symptoms, but I have seen them persistent for two, three, four hours, requiring the most studied exhibition of stimulants to remove them; and, what is still more remarkable, they will occasionally recur at irregular intervals, after their apparent subsidence. It is, however, but right that we should bear in mind, that an identical train of symptoms may supervene, where artificial anæsthesia has not been had recourse to, in subjects of the same class, after an unusual excitement of the nervous system, no matter from what cause originating. In a practical point of view, it is most important that we should recollect the possible occurrence of such symptoms, as it will be a guide to us not to press the agent with a view to its conclusive effects, under the circumstances. I could instance cases of this description where undoubtedly the advocate for anæsthetic agents should hesitate to subject his patient to their influence, could he anticipate such results. The symptoms are so distressing, even as regards the mental sensations of the patient, that, should any circumstances require subsequent surgical interference, he never can be induced to submit himself to a repetition of them. I have fancied that I have prevented this effect of chloroform by the exhibition of an anti-hysteric draught before its inhalation, in an apparently hysterical female, but my experience is too limited to venture to speak with any confidence respecting it. The expedient may be worth consideration.

"There are circumstances connected with the effects of chloroform, or other anæsthetic agents, as regards the wound, the seat of operation, which are very interesting—namely, the condition of the blood—the condition of the muscles, especially in amputations—the occurrence of after-pains or of hemorrhage, and the possible interference with healthy reparative processes. Each and all of those subjects deserve much attention, but I must only glance at them. I am disposed to say, as regards the blood, that I have more frequently observed its natural appearance in the respective vessels than otherwise—that I have seen excellent formed stumps after anæsthetic amputations—that primary hemorrhage is decidedly more the exception than the rule in similar cases*—and that reparative processes have not particularly attracted my attention as interfered with or deranged since the introduction of anæsthesia. These are subjects, however, which must be considered to be, as yet, unsettled. Indeed, it appears to me that, with respect to the whole subject of artificial anæsthesia, we are yet in the infancy of our knowledge, and that the stamp of the conclusive effects of chloroform in one set of cases is so diametrically opposite to that met with in others, it, in my opinion, proves that we have yet to learn the true secret of its salutary administration. I am, however, an advocate for its use in operative surgery, but I am so within restricted limits. In the details given of its effects I have not concealed the dangers and the difficulties to be encountered by the surgeon: on the contrary, I have enumerated many, and I venture to hope that I have suggested the means whereby some may be removed or lessened. I yet contemplate the adoption of anæsthesia in every instance with anxiety, and I hence deprecate it unless the serious nature of the case demands it.† I am strongly opposed to it in trifling, passing operations. I am favourable to it in all severe operative proceedings, with the exceptions I have noted, and with the precautions I have specified, and I have witnessed such transcendent, such indescribable benefits from it, both in allaying the shock and in abrogating or mitigating the pain attendant on injuries and on operations, that I cannot too strongly impress on the minds of all, the imperative duty of studying its effects, whereby its proper and safe adoption may be secured, and the moral and medical arguments against its use be substantially lessened.*

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* The subject of hemorrhage, after operations, and that of the reparation of such wounds in anæsthetic cases, I have, in conjunction with Mr. Wilmot, particularly investigated. Mr. Wilmot's opportunities, when resident surgeon in Steevens' Hospital, were considerable, and he hesitates not to confirm the opinion of the comparatively rare occurrence of the one, and the non-interruption of the ordinary healthy processes in the other, the symptomatic fever being unquestionably less violent, and that reaction on the nervous shock attendant on operation being almost nullified.

† The operation which the advocates for anæsthesia recommend the skeptic to witness, is that of lithotomy. I lately placed a child, aged about two years, the subject of

"One of the most interesting and most happy effects of chloroform I have ever witnessed occurred in the following distressing case, in April, 1849:—

"A young lady, of highly cultivated mind, aged about 25 years, and unmarried, was obliged to submit to amputation of her thigh, for malignant disease engaging the bones of the leg. She had heard of chloroform, and was anxious to learn particulars respecting it, but had, by no means, made up her mind to submit to its influence. I had recourse to the device (which is occasionally admissible, particularly in children) of sprinkling some Eau de Cologne on the outer sponge of the apparatus—the inner being already saturated with chloroform; she was sitting in bed, and in conversation with Sir Philip Crampton, when, taking the apparatus in her hand to examine it, she commenced to inhale from it. After some few minutes, I observed that she was somewhat incoherent and unconscious. I took the apparatus from her, renewed the chloroform, and in a second or so, she lay tranquilly back in our arms. We carried her to the adjoining room, where the necessary appliances for amputation had been previously prepared. The details of the operation were gone through by Mr. Colles, whose patient she was; she was afterwards replaced in bed, and all this occurred without any suffering on her part, and in complete ignorance of all proceedings. It was not without some difficulty that Sir Philip Crampton could persuade her that the operation had been performed. Here, then, was true anæsthetic sleep —no stertor—all was perfectly placid."

21. *Acute Traumatic Tetanus treated with Chloroform.*—R. G. H. BUTCHER, Esq., relates (*Dublin Med. Press*, July 30th, 1851) a case of acute traumatic tetanus, in a boy eight years of age, treated by the inhalation of chloroform. The article rendered the paroxysms shorter, and mitigated their violence, but, as in the other cases reported, did not arrest the disease; and the patient died twenty-four hours after first complaining of stiffness of the neck and difficulty of swallowing, and twenty hours after the accession of the first paroxysm.

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such, under its influence. The child was a patient in the Meath Hospital, and was operated on by Mr. Smyly, and all who witnessed the operation must have been gratified. Cases of other children I might also enumerate. I will merely remark that, in Ireland, patients are not always as still and as motionless (though in profound sleep) as elsewhere depicted, and Irish surgeons will bear this in recollection. The same automatic muscular movements occur, as too often witnessed in amputation.

* I am gratified to have the permission of Sir P. Crampton to publish the following very apposite letter on this subject. Coming from an authority so justly estimated and so highly respected, it cannot fail to produce proportionate good:—

"Merrion-square, January 12, 1851.

"DEAR FLEMING.—With reference to your inquiry, 'whether I have found artificial anæsthesia beneficial or otherwise in surgical cases,' I have no hesitation in stating that I have found it eminently beneficial, not merely in cases of operation, but of severe injury, and of neuralgic affections, unconnected with injury. I have seen chloroform and ether employed in numerous cases both in London and Dublin, and having myself employed them extensively both in public and in private practice. Up to this period, I have never seen artificial anæsthesia productive of any serious inconvenience; whilst its power of preventing or greatly diminishing pain has been decisive. I am far, however, from asserting that fatal consequences have not occasionally resulted from its use. I trust, however, that a more extended experience will lead to the discovery of means of employing this powerful agent, which, without impairing its effects, will render it more safe.

"Believe me very sincerely yours,

"PHILIP CRAMPTON."

22. *On the Use of Collodion in Ingrowing Nail.*—M. **Meynier** treats this affection by pressing down the fleshy portion, and pouring in between this and the edge of the nail a small quantity of collodion, which soon solidifies, induces rapid cicatrization of the ulceration, and, when the disease does not arise from an abnormal shape of the nail, procures a cure. M. H. Larrey has recently tried the plan in five cases, and succeeded in four of these.—*Bull. de Thérap.*, tom. xl. p. 185.

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23. *Some Observations on the Pathology of those Affections of the Ear which produce Disease in the Brain.* By **Joseph Toynbee**, F. R. S. ("Proceedings" of Royal Med. Chirurg. Society, June 24, 1851.)—In this communication the author has a twofold object: the first is to point out the nature of the several affections of the ear which produce disease in the brain; the second to show that each of the cavities of the ear has its particular division of the encephalon, to which it communicates disease. Thus, that—

1. Affections of the external meatus and mastoid cells produce disease in the lateral sinus and cerebellum.
2. Affections of the tympanic cavity produce disease in the cerebrum.
3. Affections of the vestibule and cochlea produce disease in the medulla oblongata.

1. In speaking of the external meatus, its intimate relations with the lateral sinus and cerebellum are pointed out; the affection most frequently producing disease in these parts is shown to be catarrhal inflammation of its dermoid layer, one of the numerous diseases which have hitherto been classed together under the term otorrhœa. This affection of the external meatus is fully described; and it is shown that it is found to endure during many years, without the presence of pain, or any other symptom calculated to apprise the surgeon of the presence of a formidable disease, while the bone may be becoming slowly carious, and portions of the dura mater and cerebellum disorganized.

In the second division of the paper, the tympanic cavity is described to be the part of the ear from which disease is most frequently propagated to the brain. This circumstance is accounted for, first, by the great liability of the mucous membrane of the tympanum to undergo pathological changes; and, secondly, by the existence of very intimate relations between this membrane and the dura mater. The affection of the tympanum which most frequently produces disease in the cerebrum is chronic catarrhal inflammation of the mucous membrane, an affection thus far only known as an otorrhœa. The four changes in the dura mater and cerebrum produced by the affections of the tympanum are—

1. Inflammation of the dura mater, and its separation from the surface of the petrous bone by serum.
2. Ulceration of the dura mater, and its complete detachment from the petrous bone.
3. An abscess in the substance of the cerebrum.
4. Undefined suppuration of the substance of the cerebrum.

From a careful examination of cases, it appears that chronic catarrhal inflammation of the mucous membrane of the tympanum may exist as many as twenty or more years, without the production of any disease beyond it, or at least without the existence of symptoms by means of which the presence of such disease can be diagnosed; nevertheless, in the great majority of cases, vital structures become sensibly affected in a much shorter period.

The third section of the paper is devoted to the consideration of the labyrinth, and it is shown that purulent matter in the vestibule or cochlea sometimes causes disease of the auditory nerve, which is transmitted to the medulla oblongata, producing suppurative inflammation of the meninges, and death, without the presence of any caries of the bone.

In the course of this paper, the author shows the necessity of abolishing the use of the term otorrhœa, and of using in its place the names of the several diseases, eight in number, of which a discharge from the ear is one of the symptoms. In conclusion, the facts which he is desirous of impressing upon the minds of medical men are, that the bone, dura mater, and substance of the brain may be slowly undergoing disorganization, without the presence of any other symptoms calculated to reveal to the medical man the existence of formidable disease, than the presence of a discharge from the external auditory meatus; and that, consequently, no person suffering from catarrhal inflammation of the dermoid layer of the meatus, the membrana tympani, or of the mucous membrane of the tympanum, can be assured that disease is not being prolonged to the temporal bone, the brain, and its membranes; and that any ordinary exciting cause, as an attack of fever or influenza, a blow on the head, &c., may not induce the appearance of acute symptoms, which, as a general rule, are speedily fatal. Appended to the paper are tables, giving the particulars of sixty-five cases of disease extending from the ear to the brain, in which tables the duration of the chronic and acute symptoms, and the post-mortem appearances, are concisely detailed.—*Lancet*, July 5, 1851.

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24. *Treatment of Aneurism by Compression.*—The journals of the last three months contain the reports of several cases in which compression was resorted to for the cure of aneurism; and, as the profession seem now disposed to give this mode of treatment a fair trial, we shall doubtless in a short time have ample materials from which to form an estimate of its value, and the cases to which it is particularly appropriate.

We subjoin a summary of the observations which have been recently made.

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25. *Case of Popliteal Aneurism treated by Compression; with Remarks, and a List of the Cases treated in Dublin.* By O'B. Bellingham, M. D. (Read to the Royal Medical and Chirurgical Society, June 10, 1851.)—The subject of this case was a labourer, aged forty-two, who was admitted into St Vincent's Hospital, under Mr. Bellingham's care, in November, 1850. The aneurism, which was of large size, was seated on the right side; had a strong, heaving impulse, and a short, harsh bruit was heard on auscultation over it. The treatment was commenced by placing the patient upon a very restricted diet, particularly as regards fluids (six ounces only being allowed in the day, with eight ounces of solid food), confining him strictly to the horizontal posture, with a dose of purgative medicine each night. Under this treatment, continued for some days, the pulse, from being hard and incompressible, became soft, small, and slow. Compression was commenced December 4th, at eleven A.M., by means of two instruments, one upon the artery where it crosses the ramus of the pubis, the other at the lower third of the thigh. At half-past eight P.M., the outlines of the aneurismal sac were more distinct; the patient's skin was cool, and he did not complain of pain. He remained awake during the night, and kept up the compression himself, the points upon which the pad of the instrument should rest having been marked with ink. Next morning, between nine and ten, on unscrewing the instrument, the pulsation of the aneurism was found to have ceased; the tumour was hard, solid, and circumscribed, and an enlarged collateral vessel was felt over the centre of the popliteal region. Moderate pressure was continued for some days; the patient was kept in bed, and the diet was gradually improved. The tumour diminished in size, and became harder, and when the patient returned home, the limb was as strong as the other, and his general health perfectly good. Some remarks upon the treatment of aneurism by compression followed, in which the author contrasted the results of compression and the ligature, and pointed to the advantages likely to ensue from combining constitutional with local treatment. In a table appended to the paper, the author has given a list of all the cases of external aneurism treated by compression in Dublin during the last seven years, in which the seat of the disease is mentioned, the hospital or other locality where the treatment was conducted, the surgeon's name who had the management of the case, and the results are stated. Of these, it appears that twenty-six were cases of popliteal aneurism, twenty-one of which were cured; six were cases of femoral aneurism, of which five were cured, the sixth having been a form of traumatic aneurism in which amputation of the limb was the only resource. Three were cases of brachial aneurism, of which two were cured; in the other, a high bifurcation of the brachial artery existed, and two

vessels required to be tied. One was a case of radial aneurism, which was cured by compression. Of the remaining five cases of popliteal aneurism, amputation of the limb was performed in one, the patient recovering; in a second, the ligature was used with success; in a third, the patient was obliged to return to his employment before the cure of the disease; the aneurism diminished in size, and the patient continued to work for above three years afterwards, when symptoms of aortal aneurism supervened, under which he sank. In a fourth, the patient died of pulmonary disease, and the fifth patient, who was of a broken-down constitution, died of erysipelas.—*Lancet*, June 21, 1851.

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26. *Popliteal Aneurism; Pressure; Deligation of the Femoral Artery; Recovery.*—The following case occurred under the care of Mr. Lawrence, and is reported in the *Lancet* (July 19th, 1851). William J——, aged thirty-one years, waterman, light complexion, short stature, and habitual good health, was admitted into Bentley ward, January 27, 1851, under the care of Mr. Lawrence. The patient states that his habits have generally been temperate, that he has not overworked himself, and that the only ailment he had had to complain of was an occasional pain in the chest. Seven months before admission, he noticed in the right popliteal space a tumour of the size of a marble, which pulsated visibly: the circumstance caused him, however, no alarm, and he was content to rub the tumour with turpentine, without seeking for medical aid. The tumour, however, gradually increased in size, without giving intense pain, and the patient was enabled to attend to his occupation up to two days before admission.

When examined, the tumour was found to be of the size of an orange, situated in the centre of the popliteal space, and presenting very strong pulsations. The hand applied over the swelling received the sensation of a distinct thrill, and a loud bruit was heard on the application of the stethoscope. The patient did not complain of a great amount of pain, neither in the tumour nor in the leg, and the rest of the arterial system seemed in a sound condition.

Mr. Lawrence resolved to try compression of the femoral artery in order to arrest the progress of the disease, and on the 31st of January, four days after admission, a compressing apparatus was applied. It was the usual clamp-shaped instrument, provided with two pads connected with the steel rings (which encircled the thigh without compressing it) by screws of spring materials, the upper part of the screws working as ball and socket. One of the pads was made to press upon the artery in the groin, the other in Scarpa's space, and they were intended to act alternately.

By the use of this instrument, the pulsations of the tumour were completely arrested; the patient, however, stated that the pressure gave him intense pain, and that he should probably not be able to bear the compression long. Nor did his feelings deceive him, for he could endure the apparatus but two hours, at the end of which time it was removed. On the 4th of February, four days after the first application of pressure, Mr. Lawrence proceeded to place a ligature on the femoral artery, the patient having been rendered insensible by chloroform. The artery was tied in Scarpa's space in the usual manner. The pulsations of the tumour ceased immediately, and have never returned.

No untoward symptoms whatsoever marked the progress of the case, and so thoroughly did the collateral circulation become established in a short time, that the limb did not sensibly lose any of its natural temperature, though no cotton-wool nor flannel wrappings were used. The patient did not complain of pain in the leg, and he seemed to experience no uneasiness but what might be expected from a common wound in the thigh.

Ten days after the deligation of the vessel, there was a little numbness in the foot; the latter was, however, not cold, and the wound in the thigh looked well. The tumour in the ham had now become quite hard; there was no thrill or pulsation to be noticed in it, though the size had not materially decreased. The swelling gradually diminished, however, the patient progressed very satisfactorily, and on the 28th of March, about seven weeks after the deligation of the femoral artery, he was discharged in good condition, the tumour having decreased to the size of a pigeon's egg, and being of very firm consistence.

The only complaint the man had made during the latter days of his stay in the hospital was of tightness and pain in the chest, unaccompanied, however, by shortness of breath. The stethoscope applied to the region of the heart did not afford any bruit or abnormal sound about that viscus.

27. *Aneurismal Dilatation of the Popliteal Artery, treated by Pressure.*—By JAMES PAGET, M. D.—The subject of this case was a gentleman, 27 years of age, tall and thin, who had enjoyed good health until October 1845, when he was injured by some boards falling across his legs, after which he suffered severe pain in his knees and legs, and muscles of calf of left leg whenever he walked. Just before Christmas, 1849, he found a pulsating tumour in left ham, which increased until seen by Dr. Paget, 9th of Jan. 1850. At this time, there was in the left ham a tumour of oval form, having its long axis parallel with that of the limb, and measuring two and a half inches by two. It pulsated very forcibly, and equally on all parts of its circumference, and, with pulsation, felt as if it thrilled. A loud bellows sound was audible with the ear placed over the tumour, or over the artery above it. The pulse in the left dorsal artery of the foot was rather feebler than that in the right; but Dr. P. could detect no difference in time between them. The skin over the swelling was tense; but its tissue, like that of all the adjacent parts, appeared completely healthy. There was, indeed, no other appearance of disease, either local or general.

The treatment was commenced on the 31st of January, when first pressure was made to the femoral artery, with one of Dr. Carte's tourniquets. Two instruments were applied, and alternately tightened and relaxed. These caused great pain; and after the fourth week, were changed for the Italian tourniquet. From this time till the 16th of February, the size of the aneurism decreased; but, after ten days, no further progress was made. On the 21st of March, the diminution recommenced; and by the 18th of April it was reduced to the size of a hazelnut, but still pulsated freely. After eleven weeks' confinement, the patient's patience became exhausted, and he wished to move about; but modified pressure was kept up for six weeks longer, when pulsation one morning suddenly ceased, and the aneurism was cured.

In commenting upon this case, Mr. Paget remarks, that the disease was probably an example of aneurismal dilatation, or, as Mr. Luke has named it, tubular aneurism; an aneurism of the cylindriform or fusiform variety described by Cruveilhier—that is, a dilatation affecting, almost uniformly, the whole circumference of the artery in a certain portion of its length. Such dilatations are very rare in the popliteal artery; yet that such a one existed here is made very probable by many things observed in the case, and especially by the great diminution of size of the aneurism while under treatment.

The cure of popliteal and similar aneurisms, whether treated by pressure or ligature, is (Mr. Paget remarks) usually accomplished much more by the filling of the sac with blood-clots, than by the contraction of the sac. Hence, usually, after the pulsation had ceased, the swelling, with comparatively little diminution of size, remains firm and nearly solid, till slowly its size is diminished by the absorption and shrinking of its contents. When, however, as in the case here related, a popliteal aneurism consists in a dilatation of the whole circumference of the artery, we may believe that there is the same indisposition to the formation of clot as in the similar dilatations of the arch of the aorta, and of other great arteries in which no part of the dilatation is far remote from the main stream of blood. In all these cases, it is a matter of common and just observation, that fibrinous deposits are scanty and rare; and, therefore, in the similar dilatations of the smaller arteries, we might expect that the effect of any continued obstruction of the trunk would be the gradual contraction of the dilated portion, rather than its filling up with clot.

Other considerations, Mr. Paget thinks, strengthen this opinion of the nature of the case here related; especially, first, that as the enlargement of the artery after the injury was very slow, there was probably no rupture or serious damage of its coats, but that such a change as might lead to their slow and extensive impairment of structure; and, secondly, that the sensation derived from the touch of the dilatation was always that of a sac tensely filled with fluid, and containing no clots, such as are almost constantly found in saccular aneurisms, *i. e.*, partial or lateral dilatations of the arterial walls.

Commenting on the results of the treatment of this case, by pressure on the trunk of the artery above the aneurism, Mr. Paget thinks that, considering that the patient was instructed in surgery, and well understood the plan on which the treatment was to be conducted, that he had himself chosen this plan of treatment, and submitted to it without interruption, and that it was attended with no local injury or other inconvenience, few cases could have been better suited to the plan; yet so long a period elapsed prior to the cure, that he would not advise it in preference to ligature. He does not, however, discountenance compression, being disposed to attribute its tediousness, in the present case, to the peculiarity of the tumour above alluded to.—*Prov. Med. and Surg. Journ.*, July 23, 1851.

28. *Popliteal Aneurism—Treatment by Pressure—Deligation of the Artery—Gangrene—Death.*—Hugh M——, aged 43, a man of spare make and nervous temperament, was admitted into Guy's Hospital under Mr. HILTON, Dec. 21, 1851. As a porter, he was in the habit of straining his legs considerably. For some time past the patient has not drunk to excess, but formerly he was very intemperate, and on being closely questioned as to any blow or injury he may have sustained, nothing of the kind is discovered. One year ago the leg and ankle swelled at times, and nine months since the patient perceived a swelling like a walnut in the ham of the left leg. No attention was, however, paid to this symptom, until a fortnight before admission, when such sudden pain seized the patient, that he could not place his leg on the ground; and he now, for the first time, noticed a pulsation in the popliteal tumour, the latter extending from the ham to the calf of the leg. The pain has since become much worse, and includes the whole thigh and leg.

On examination, a deep-seated, soft, fluctuating, and pulsating tumour was discovered, extending from the popliteal region into the calf of the leg; it diminished in size by pressure on the femoral artery, and the reverse happened when the artery was compressed below the tumour. The usual symptoms of popliteal aneurism, including a distinct bruit, were present.

Mr. Hilton prescribed rest, an elevated position to the limb, the pain to be combated with opium, and the thigh and leg to be carefully bandaged from the toes upwards. About a fortnight after admission, Mr. Hilton had an apparatus applied for the compression of the artery. It was composed of two separate instruments; the one, fixed to the pelvis, was intended to press on the artery in its course of the head of the femur; the other, applied to the thigh about half-way down, was to compress the vessel in Scarpa's space. The pulsation was not arrested by the use of these instruments, but only moderated.

The patient bore the pressure pretty well, complained only of a little cramp in the leg, and stated that the acute suffering he experienced in the limb before the apparatus was put on, was now quite removed. On the third day after the commencement of pressure, scarcely any bruit or pulsation was left in the sac, the latter was less tender and swollen, and the patient could almost straighten his leg, though he had in it a sensation of numbness and tingling.

On the fifth day he began to feel uneasy and complained of the pressure; the pain in the leg had returned, the tumour was larger and softer, and the pulsation much more forcible. On the eighth day the pain in the leg and foot was much increased, and at six in the evening the suffering was so intense that the patient could not bear the pressure or even allow the limb to be touched; the apparatus was, therefore, removed, and a drachm of laudanum administered.

Mr. Hilton now directed digitalis to be given internally, and ice to be applied to the outer side of the tumour. The ice gave much pain and was discontinued. The tumour was, however, becoming larger, and the pulsation scarcely perceptible on the inner, but more distinct on the outer side. On the tenth day after the first application of pressure, Mr. Bransby Cooper, Mr. Cock, and Mr. Hilton, held a consultation on the case, and it was agreed that the artery should be tied in the upper part of the thigh.

The operation was, however, delayed for a couple of days, as active inflammation was going on in the artery and limb. The thumb lightly pressed on the femoral artery caused intense pain, both in the course of the vessel, and the whole limb; it might thus be conjectured what distressing symptoms the ligature would occasion. The patient was placed under an antiphlogistic treatment, with purgatives, &c., and as pressure could no longer be borne, Mr. Hilton had no alternative but to tie the artery (under unfavourable circumstances) or remove the leg. The first of these measures was preferred, and Mr. Hilton put a ligature on the femoral artery, about the middle of the thigh. The coats of the vessel were found much thickened and infiltrated; the patient was at once put into a warm bed, the foot and leg comfortably wrapped up in flannel.

Half an hour passed in comparative ease, when suddenly pain of the most intense and agonizing kind in the whole of the left thigh and leg seized the patient. Large doses of opium were administered, and chloroform inhaled two different times without alleviation. Opium given continuously at last procured sleep, and the patient rested the whole night and part of the following day. The man now complained no longer of pain, but of numbness; the tongue became brown and dry, and the pulse beat 110, small and weak.

On the third day after the deligation of the artery, the pain was absent, the patient slept well, the tumour became harder, diminished in size, and the pulsations did not return. Matters went on very favourably until the tenth day, when shivering occurred, and pain arose in the foot, which was now beginning to fail in keeping up its proper temperature. Wine was now ordered, and the pain having two days afterwards become very violent in the leg and around the knee, Mr. Hilton made a small opening in the sac at its inner and lower part, and allowed three or four ounces of dark, grumous, exceedingly fetid and purulent blood to escape.

Some effusion around the knee-joint was now noticed; a small opening was therefore made on its internal and inferior aspect; but no freeing of matter ensued. Pain and stiffness in the left *elbow*-joint were now complained of: a little more blood was allowed to issue from the aneurismal sac, and a plug of lint placed in the aperture. The patient now took as much as twelve ounces of wine a day, and though the pain in the elbow-joint diminished, it now declared itself on the shoulder, and intense heat attacked the affected leg and foot. Pulse 130, irregular.

On the 1st of February, being the fifteenth day after the application of the ligature, the pain had ceased, but the patient was extremely depressed; the toes on the left side, with a great portion of the foot, became insensible, and of a mottled purple colour; the wound of the thigh remained stationary and the ligature firm.

On the eighteenth day the general symptoms were worse, the gangrene spread over the whole foot and half way up the leg; several vesicles formed, and a quantity of bloody serum escaped from some of these. A line of separation appeared to form a little above the middle of the leg; but the patient, in spite of the stimulants which were plentifully given, became so exhausted that he died on the twenty-second day after the deligation of the artery, one month after the application of pressure, and six weeks after admission.

On a post-mortem examination, pus was found in the elbow, shoulder, and knee-joints. The viscera were tolerably healthy, and no ossific deposit was observed in the femoral or any other artery.

After the perusal of the foregoing case, it will become evident that pressure is a very unfavourable forerunner to the ligature, and that there are patients with whom all methods of treatment, from nervous susceptibility and want of tone, fail of yielding good results.—*Lancet*, June 14, 1851.

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29. *Popliteal Aneurism Cured by Pressure on the Femoral Artery.*—A case of this is recorded by Dr. W. Ward, of Huntingdon, in the *Prov. Med. and Surg. Journ.* (July 9th, 1851). The subject of it, aged 36, an ostler, who had always enjoyed good health, was admitted into the Huntingdonshire Infirmary, March

13th, 1847, with a somewhat diffused swelling on the popliteal space, which had a distinct pulsation through its whole extent, especially on the outside. Upon compressing the femoral artery, the pulsation ceases, and the tumour diminishes in size; the stethoscope gives a distinct *bruit de soufflet;* the tumour appears about the size of a small egg; there is great pain felt in the tumour, which prevents his sleeping at night; the general health is good; the heart's sounds are normal; the posterior tibial can be distinctly felt, although pulsating feebly; the anterior tibial more feeble, and not so distinct.

On the 19th March, Signorini's tourniquet was applied over the superficial femoral, at the upper third of the thigh, not to completely stop the circulation, but only to impede it, the intention being not to apply pressure too forcibly at first. It was borne very well for a few hours, when the tourniquet was slightly slackened by the patient. Before the application of the tourniquet the temperature of the affected limb below the knee was lower than the sound one; three or four hours afterwards the temperature increased, and became higher than the other, and a slight swelling of the foot and leg appeared.

20th. Had no sleep; at intervals has tightened and slackened the tourniquet; the posterior tibial can be felt beating distinctly; there is slight œdema of the limb. The circumference of the sound limb is thirteen inches and a half, that of the affected seventeen inches, measured round the knee. Ordered an aperient. Pulse 80; tongue clean; slight thirst.

21st. Slept tolerably well; there is considerable swelling of the leg; bowels open from an aperient.

22d. Slept but little; obliged to slacken the tourniquet, or could not sleep; pulse 84; slight thirst; the temperature of the leg higher than the sound one; felt much ease from the application of Goulard lotion to the foot and leg. Size of the limb seventeen inches. On removing the pressure, pulsation of the tumour more feeble than before it was applied. The posterior tibial artery cannot be felt, probably owing, in part, to the swelling of the foot.

This treatment was continued, with variation of the pressure according to circumstances.

April 22d. For the last three weeks he has had no pain under the ham, and the aneurismal tumour has considerably diminished, and so altered in its character as to leave little doubt that the aneurism is becoming obliterated. Pulsation in the posterior and anterior tibial cannot be felt. During the whole of this month slight pulsation could occasionally be felt, and pressure was continued, with occasional intermission.

In the middle of June, some slight pulsation with bruit still continuing, the pressure, which had been left off, was reapplied. This was continued for three weeks, when no further pulsation could be felt.

Aug. 28th. There is now little or no swelling to be perceived in the ham; no pain upon walking; no pulsation. There is a slight bruit to be heard when the leg is flexed, and the stethoscope pressed deeply into the popliteal space; but this is probably produced by the compact coagulum around the artery. Discharged.

June, 1851. Up to the present time continues perfectly well.

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30. *Account of the Dissection of a Case in which two Popliteal Aneurisms had been treated by Compression of the Femoral Arteries.* By PRESCOTT HEWETT, Assistant Surgeon St. George's Hospital. ("Proceedings" of Royal Medical Chirurgical Society, June 10, 1851.)—A man, aged thirty-eight, was admitted into St. George's Hospital in the middle of 1848, under Mr. Cutler, with an aneurismal tumour in each ham. That on the right side, completely filling this region, was compressible, but could not be emptied; that on the left, not larger than a small egg, was hard, and to a great degree apparently solid, and with much less pulsation. The tumour on the right side had only existed three months, and nothing had been done for it. From the account of the patient it appeared that the disease on the left side, which had begun about eighteen months back, had been treated by compression of the femoral artery, at the Wexford Infirmary, where the pressure had been kept up, more or less, for seventeen weeks, during which time the limb had regained its natural size,

and the tumour was reduced to its present state, from which it has never since varied, and has caused him but little inconvenience. His general health, which had begun to give way about two years and a half back, had prevented him from following his business of musical instrument-maker. When admitted into the hospital, he was pallid and apparently suffering from great debility. At a consultation of the surgeons, it was determined, under existing circumstances, that compression should first be applied to the right femoral artery, and the instrument, a ring tourniquet, was so adapted as only to lessen the circulation in the limb, and to be worn for a few hours daily. In some little time the limb was reduced in size, and the tumour became smaller and firmer, but pulsation still remained. Some six weeks after his admission, and whilst under surgical treatment, cough and expectoration, with difficulty of breathing, made their appearance. Auscultation detected nothing abnormal about the heart, but the lungs were found to be engorged at the back part. The chest symptoms went on increasing in severity, and the patient one day suddenly brought up a large quantity of arterial blood, and died shortly afterwards. The tumour in the right ham had gone on decreasing in size, and had become firmer and more solid, but some pulsation was still felt. No change had occurred in the left ham.

At the examination of the body, which took place thirty-one hours after death, the left aneurismal tumour, deeply imbedded in the popliteal space, was found lying between the joint and the artery, of the size of an egg; it was pyriform in shape, and apparently quite solid, but on cutting into it the lower half only was filled with long-standing coagula; the upper part, still presenting a cavity lined throughout by a perfectly smooth membrane continuous with the coat of the artery, merely contained some small recent clots. Of the two openings into the sac, the upper one was large, and nearly of the size of the artery; the lower one, on the contrary, was much contracted, and scarcely admitted a common-sized probe. The portion of the artery lying upon the sac was also very much contracted, but its coats were healthy, as well as those of the posterior and anterior tibial vessels, which were of their normal size. In the upper part of the popliteal, and in several parts of the femoral, there were large patches of atheroma, with three distinct aneurismal dilatations, one in the former vessel and two in the latter. The femoral artery and vein were pervious in their whole length, and the surrounding cellular tissue was not thickened. The vein and the nerve in the popliteal space were firmly adherent to the sac with a few of the fibres of the gastrocnemius muscle. The aneurism on the right side, larger than a cricket-ball, was also lying between the artery and the knee, to which it was firmly adherent. It was filled with laminated coagula, save at the back part, where there was still a small channel leading from the upper into the lower part of the vessel; this channel was rough throughout, and covered with recent fibrine. The upper opening of this channel was free and smooth; the lower one was small, and below it the artery was reduced to the size of the posterior tibial. Above the aneurism the coats of the artery were much thickened by atheroma, and here too, about an inch and a half above the tumour, was another small aneurismal dilatation. The femoral artery presented several patches of atheroma, but it was otherwise healthy, and, as well as the vein, pervious throughout its whole course: the surrounding cellular tissue was not thickened. With regard to the popliteal vein and nerve, the appearances were the same as those observed on the left side. The thoracic aorta was extensively affected with atheroma throughout a great part of its course, and it was somewhat dilated. In its arch, it presented three distinct aneurisms, one of which, the largest, was lying between the large vessels and the windpipe, into which it had burst by a small ulcerated opening, about an inch above the bronchi: the cavity of this sac was partly lined with long-standing coagula. The bronchi were filled with blood, in addition to which the lungs themselves presented several large patches of pulmonary apoplexy, and were extensively affected with emphysema. All the abdominal organs were healthy, excepting the kidneys, which were somewhat smaller than natural, rough on their surface, and with several small cysts in their structure.—*Lancet*, June 21, 1851.

31. *Treatment of Strictures of the Urethra.*—[G. J. GUTHRIE, Esq., in a lecture recently delivered before the Medical Society of London, draws the following conclusions in regard to the treatment of strictures of the urethra, which, as embodying the experience of this veteran and judicious surgeon, are entitled to great weight:—]

1st. That a hard and elastic, or an intractable stricture is never permanently cured by dilatation, or by the application of caustic, although it may be materially relieved by the regular periodical use of a dilating instrument.

2d. That the division of an old, hardened, or elastic stricture through the perineum is not usually followed by a permanent cure, although it is always attended by immediate relief; the disease being apt to return unless a solid sound or catheter is occasionally passed to prevent it.

3d. That the operation of dividing the perineum and urethra in such cases is sometimes attended by severe hemorrhages, by fever, and is occasionally followed by fistulous openings, giving rise to much inconvenience.

4th. That such division does, in some instances, effect a permanent cure.

5th. That the division of the urethra through the external parts should never be attempted in any portion of it anterior to the bulb, such operation not being necessary; for the narrowest stricture of the pendulous or movable part may always be divided internally with much less comparative danger than by the external incision, inasmuch as the instrument can be guided through this part by the finger and thumb of the left hand of the surgeon with a certainty almost unerring.

6th. That the stricture considered by all surgeons as the most important and difficult of cure—viz., at the termination of the bulbous portion of the urethra—may always be divided, when impassable, by a *straight* instrument, and in general more easily than by a *curved* one; the use of which is founded on the erroneous belief that the stricture is situated in the membranous part of the urethra, instead of being, as it is, anterior to it.

7th. That the division of a stricture should, if possible, be effected by an instrument passed through it, and cutting from behind forwards, rather than from before backwards, although a combination of both methods will frequently be necessary to insure success.

8th. That the division of a stricture by these means will not always insure a permanent cure if more than the mucous membrane is implicated, unless such parts be divided also.

9th. That in cases of intractable stricture, the mucous membrane, the inner layer of involuntary muscle, and the elastic tissue external to it, should be divided, when the operation is done from within, but not the outer layer of muscular fibres, which should remain as a barrier between the stream of urine and the common integuments of the external parts—an accuracy of division not always to be attained: whence, perhaps, the difficulty of effecting a permanent cure.

10th. That when a permanent cure is effected in these cases, the divided elastic wall of the urethra is not re-united by a structure exactly similar to itself, but by common areolar tissue, rendering the part more dilatable under the pressure of the stream of urine; the formation of which dilatation can be aided during the progress of the cure by pressing on the divided part with the point of a solid instrument passed daily for the purpose of preventing, if possible, that contraction which always takes place during the process of cicatrization; a proceeding which cannot be advantageously adopted when the parts are divided through the perineum, lest it should encourage the formation of a fistulous opening, to which there is always a tendency.

11th. That in cases of intractable stricture accompanied by one or more fistulous openings in the perineum, in *young persons*, or of middle age, the operation through the external parts, or along the urethra, may be resorted to at the pleasure of the surgeon with an equal chance of success, provided the division of the obstruction or bank preventing the free passage of the urine be effectually divided, the *sine quâ non* of the operation.

12th. That the operation within the urethra should always be preferred in *elderly* persons, particularly if somewhat stout or fat, as less likely to create severe constitutional disturbance; and if this operation should fail from any cause, it by no means interferes with the due performance of the other through the perineum, which in serious cases then becomes imperative, as the last resource capable of giving relief.—*Lancet*, June 7, 1851.

32. *Four Cases of Ovariotomy.*—Dr. Elkington communicated to the Birmingham Pathological Society four cases in which ovariotomy had been performed, twice successfully, and the others with a fatal result, and exhibited the specimens.

Case I.—Was a fine specimen of fibrous tumour, the size of a large cocoa-nut, which had been developed in the folds of the peritoneum, and was accompanied by ascites. The following is a brief sketch of the history of the case:—

Mary Boyce, aged 37, mother of two children, became an out-patient of the Lying-in Hospital September 10, 1845. In 1843 she discovered a tumour, the size of a large hen's egg, in the right iliac region. The swelling gradually increased, and at the time of her application she was nearly as large as a pregnant woman at her full period.

December 11. She measures from the scrobiculus cordis to the pubes twenty-eight inches; from the umbilicus to the pubes fifteen inches; around the body at the epigastrium thirty-four inches; around the body at the umbilicus fifty-three inches; and midway between the umbilicus and pubes fifty-four inches; fluctuation is very distinct; dullness on percussion over the whole lower part of the abdomen; on pressing the fingers suddenly upon the right side, the ends strike against a solid mass; her health is good, but she suffers much inconvenience from the swelling and distension; the uterus is healthy, and *can be moved freely in every direction* with the uterine sound; there is prolapsus of the posterior wall of the vagina. About the end of December, she became so much distressed by the increased size of the swelling, that it was considered necessary to tap her. Thirty quarts of ascitic fluid were drawn off. After the operation, the solid tumour was found to be *very movable, and apparently free from adhesions.* It was supposed to be a fibrous tumour of the ovary. She rapidly increased in size again, and was obliged, in about six weeks, to be tapped a second time. This afforded her relief only for a short time, and she was obliged to have recourse to the operation nearly every month. At length she suffered so much, and became so very urgent to have the tumour removed, that it was decided, in consultation with two or three medical friends, to make the attempt.

The operation was performed in July, 1846, in the presence of Mr. Southam, of Manchester, Dr. Bell Fletcher, and many other friends. An exploratory incision was first made, the fluid evacuated, and as there appeared on introducing the finger to be no adhesions in the immediate neighbourhood of the incision, it was enlarged to the extent of five or six inches, so as fully to expose the tumour and its attachments. It was then found that it had contracted adhesions at the lower part of the fundus of the bladder, to the fore-part of the fundus of the uterus, and to the parietes of the abdomen immediately above the pubes, also above and behind to the intestines. These adhesions were considered of such a serious character as to preclude the possibility of completing the operation; consequently, the wound was carefully closed, and the patient put into bed. She died, on the fourth day, of peritonitis.

This case illustrates the difficulty of diagnosis as to the presence of adhesions. It has been stated that the tumour was very movable in all directions, and that the uterus was also readily moved from side to side with the uterine sound. This is readily explained. The adhesions were very long and loose, so as not to confine or interfere with the motions of the tumour or of the uterus.

Case II.—A cast of a large ovarian tumour of the multilocular kind, removed by operation. The tumour weighed fifteen pounds.

The patient, Mrs. L., consulted me October 6th, 1847. She stated she was 46 years of age, had been married twenty-five years, and had had five children. In 1830, she first perceived a tumour in the right iliac region; it remained stationary nearly five years. She had two children after its first appearance. In 1838 she had a severe illness, which continued some months. On recovering from this illness, the tumour was much diminished in size, and remained so for six years; it then began to increase, and during the last two years has grown rapidly. On making an examination, I found the tumour occupying the lower half of the abdomen, and extending a little above the umbilicus, which was bulging out. The tumour appeared to be divided into two portions. There is fluctuation in the tumour, but it is felt more distinctly in some parts than in others. The swelling extended from the crista of one ilium to the crista of the other, resting against the pubes, and pressing upon the bladder. Percussion dull over the whole surface of the tumour, eliciting a clear sound in the lumbar regions. The integuments were tight, and not movable over the tumour.

Examination per Vaginam.—The uterus was situated high up, the os pushed forwards, no enlargement of the uterus. The sound passed to the extent of two inches and a quarter only. The uterus movable in every direction, but not freely so. Owing to the tumour being situated so low down, and pressing against the pubes, the fundus uteri cannot be traced externally.

Diagnosis.—Ovarian multilocular tumour of the right side, probably adherent to the parietes. The uterus healthy, but its cavity shortened by the pressure of the tumour.

I saw her again in February, 1848. She was much larger, and constantly suffering from pain and sickness, which continued to harass her till the beginning of May. She was then relieved from these distressing symptoms, but suffered so much from the increase of size, and from the difficulty of breathing, that she begged earnestly to have the tumour removed. I explained to her that it was an unfavourable case for an operation, and that we should probably find adhesions which would not only increase the difficulties of the operation, but materially lessen the chances of success. She declared that she would willingly incur the risk, and so anxiously entreated us to operate, that I consented on condition that Dr. Clay of Manchester, who was about to visit Birmingham, would give me the benefit of his great experience in such cases, and should approve of the measure. Dr. C. thought there were adhesions, but that it was a case in which we should be quite justified in operating. The operation was performed July 18th, 1848, in the presence of Dr. Clay, Dr. B. Fletcher, Dr. Mackay, and several other medical friends. The tumour was connected by extensive adhesions to the parietes at the fore and lower part of the abdomen, and to the edge of the omentum, which was spread out on the upper edge of the tumour. It was very vascular, and supplied by several vessels, which passed from the lower edge of the omentum to the surface of the tumour. Several vessels were secured. Upon the anterior surface of the tumour there was a deep groove passing directly across its centre, which caused the appearance of two tumours. The patient died 36 hours after the operation, apparently from the shock.

Case III.—A large ovarian multilocular tumour, which weighed at the time of its removal nearly forty-five pounds. The following is a short history of the case:—

Mrs. Moore, Walsall, consulted me June, 1848. She says she is 31 years of age, a dressmaker, married 15 months. She began to menstruate at 17; continued regular and in good health till about two months before she was married. She was then "unwell" every week or two, and had a copious discharge. A few weeks before her marriage she had frequently slight pain in the right side. About three months after marriage she began to increase in size, and after another month the swelling increased rapidly. The swelling first appeared on the left side. She was supposed to be pregnant. She lies down on the left side. Has prolapsus uteri. Is as large as if she were in the last month of pregnancy. The tumour is very movable, irregular, and nodulated. There is indistinct fluctuation, varying in its character at different points.

Examination per Vaginam.—After replacing the uterus, which was prolapsed, there could be felt no enlargement of that organ; the uterine sound showed that the length of the cavity was natural, and that the uterus was movable in every direction. She menstruates regularly. No enlargement of the breasts. With the stethoscope no bruit to be heard in any part of the tumour.

Diagnosis.—Disease of the left ovary of the multilocular form.

She continued to increase in size. In January, 1849, she measured 45 inches round her; at this time she began to suffer very much from the great size and dragging of the tumour. Her breathing, too, was much embarrassed.

She was tapped on the 28th of February; a quart of thick gelatinous fluid was drawn off, slowly, and with difficulty; it then ceased. A second cyst was tapped, and altogether about five gallons of fluid drawn off, but the size of the tumour did not appear to be reduced more than one-half. In a month she was as large as ever. She now became very anxious to have the tumour removed, and as it seemed to be a favourable case for extirpation, and as there appeared no chance of tapping affording more than very partial and temporary relief, it was decided that we should have recourse to ovariotomy. The operation was performed on April 3d, in the presence of Dr. Clay, of Manchester; Mr. Fletcher, Walsall; Mr. Dehane, Wolverhampton; and several other medical friends. The tumour was so very large that, although the incision was extended to ten or twelve inches, we were obliged to empty one or two of the cysts before we could remove the tumour. Fortunately there were no adhesions of importance. The pedicle was broad, and was tied by a double ligature. The operation occupied about twenty minutes. She scarcely had a bad symptom after, recovered rapidly, and was out of doors in a month. The first ligature came away on the eighteenth, and the second on the twenty-first day. Her recovery was perfect, and she has continued quite well.

In April last (*i. e.* 1851) she was confined of a fine healthy girl; had an easy labour, and a rapid recovery.

CASE IV.—The next was a beautiful specimen of fibrous tumour of the left ovary, weighing twelve pounds, removed by Mr. Day, of Walsall, from whose report the following short sketch has been taken:—

Mrs. Howard, aged 42, married twenty-one years, has had nine children. About two years and a half since she found an enlargement in the left hypochondrium, which gave her no uneasiness. She consulted Mr. Day about six months afterwards, who found a hard tumour the size of a cream jug, readily movable in every direction, and attached, as he imagined, by a thin pedicle to the left ovary. She afterwards became pregnant, and had a favourable labour. After delivery, Mr. Day made an examination, and found that the tumour was double the size it was before pregnancy, but still movable in every direction, and apparently quite free from uterine adhesion. She suckled her child twelve months. She gradually increased in size. In June, 1850, her health began to suffer, and she was obliged to wean the child. The swelling increased to such an extent that it became necessary to tap her on August 30th, when three gallons of fluid were drawn off. She refilled rapidly, and in one month was larger than before the operation. At this time Mr. Day says, "Her situation was truly deplorable, being unable to remain in either the upright or recumbent position without excruciating misery, from dyspnœa and severe pain in the region of the liver and heart. But a very small quantity of urine was passed in the twenty-four hours. Diarrhœa was a distressing and constant symptom. She expressed herself suffering intolerable agony, and prayed for the operation to be performed, stating that otherwise she felt sure she must speedily die. Mr. Day operated September 26, 1850. He first drew off five gallons of ascitic fluid with the trocar; then passed a director through the opening made by the trocar, and laid open the abdominal cavity to the extent of five inches, and having ascertained that the tumour was free from adhesions, he continued the incision upwards, making use of his fingers instead of a director, to within a short distance of the ensiform cartilage. He also extended the incision below nearly to the pubes. The tumour being then completely brought into view, was found to be attached by a broad but thin pedicle, about three inches in width, to the left broad ligament of the uterus. The pedicle was secured by a double ligature, and divided close to the tumour. The operation was concluded and the patient in bed in fifteen minutes. The first ligature came away on the twelfth, and the second was removed on the fifteenth day. It was followed by a small quantity of discharge, which had the appearance and smell of feculent matter, but the discharge soon ceased. Her recovery was slow and for some time doubtful. She suffered much from diarrhœa, sickness, and an aphthous condition of the mouth and fauces. She was able to walk in the garden on the 31st of October, and from that time gradually recovered her health and strength. *Provincial Medical and Surgical Journal,* Aug. 6th, 1851.

33. *Case of Ovariotomy successfully performed.* By JOHN BEALES, M.R.C.S. ("Proceedings" of Royal Med. and Chirurg. Soc., June 24, 1851).—In the early part of September, 1850, the author was consulted by a woman, aged thirty, unmarried, for an enlargement of her abdomen, which she had first noticed on the left side in the previous December. Latterly she had suffered from loss of appetite, loss of strength, and wasting of the legs and arms. The author found an ovarian tumour, hard to the touch, in the left iliac region and left hypochondrium, but soft and fluctuating on the opposite side, evidently in two distinct sacs, movable, and free from tenderness; and he was induced to recommend its removal. The operation was performed on the 4th of December, under the influence of chloroform. The incision was ten inches in length, extending from the scrobiculus to the pubes. Two cysts were punctured, and their contents removed, before the tumour could be removed from its cavity; the pedicle was tied by means of a double ligature passed through its base, and the tumour was then separated as near as possible to it. The uterus and right ovary were healthy. Everything went on favourably after the operation. On the 15th she was able to walk about the room. On the 25th the ligature came away. The tumour was three feet two inches in its largest circumference, and two feet one and a half inch in its smallest; it weighed twenty-five pounds; it was multilocular, marked on the surface by bands of white fibrous tissue corresponding with the septa of the cysts. The author then gives a description of the walls of the cysts. The cysts varied very much in size, and in the density and tenacity of their contents; in the smaller ones the fluid was clearer and thinner. The average specific gravity was 1010, but the fluid contained a very large quantity of albumen. The total quantity of fluid was from twenty-one to twenty-three pints.

[A full detail of this case has been published in the *Prov. Med. and Surg. Journ.*, July 23d, 1851.]

34. *An Ovary removed by mistake for a Labial Cyst.*—At one of the late meetings of the Surgical Society of Paris, M. GUERSANT, Chief Surgeon to the Hospital for Children, brought forward a case in which an error in diagnosis was committed, and which ended fatally. The patient was a little girl, eleven years of age, who, ever since she was one year old, had in the left labium a small painless tumour. Of late, however, this tumour had become troublesome, and interfered with walking. When examined, it was found of the size of a small walnut, situated in the thickness of the labium, and extremely movable, so much so, that it could be pushed downwards to the most posterior portion of the labium, and upwards as far as the external ring. It was, however, impossible to press the tumour into the ring, which latter presented no abnormal dilatation. The tumour had a great deal of analogy with a testicle. M. Guersant looked upon it as a cyst, and resolved to remove it. A longitudinal incision brought into view a membrane much resembling tunica vaginalis, and having the aspect of the peritoneum. Through this membrane an ovoid body was observed, which was no other than the ovary; it was attached to a pedicle formed by the Fallopian tube, which ran into the abdomen through the inguinal canal. M. Guersant placed a ligature on the pedicle, and cut out the ovary. Acute peritonitis occurred the very next day, and the patient died on the third day after the operation. M. Morel mentioned during the discussion that he had had an opportunity of seeing a tumour of the same kind in the labium, and formed by the ovary; no modification of size or sensibility was noticed to occur at the menstrual period. M. Lenoir stated that Pott has related a case in which the two ovaries were removed by an error in circumstances analogous to those of M. Guersant's patient.—*Prov. Med. and Surg. Journ.*, Aug. 6th, 1851.

35. *Serious Hemorrhage following Excision of the Tonsils.*—The following instructive case forms the subject of a memoir by M. CHAISSAIGNAC (*Archives Générales*, Mai).

The patient, a female, aged 21, was the subject of enlarged tonsils, one of which had been removed eight days before by M. Sandouville. The operation had been quite successful in its immediate results. The author was summoned in consequence of an uncontrollable spitting of blood. On looking into the throat for the purpose of discovering the exact seat of the hemorrhage, M. Chaissaignac found that it proceeded from the bottom of a concavity left by the excised tonsil.

The patient had been for some time constantly spitting blood, and had also vomited a large quantity. The pulse was small, the extremities cold, and altogether she was in imminent danger. Many means had been adopted without success, such as ice externally, and styptics of various kinds internally.

The first proceeding adopted by the author was to make pressure on the bleeding surface with lint dipped in lemon-juice. This controlled the bleeding for a time, but after he had left it returned with equal intensity. He now intended to apply the actual cautery, but before resorting to this it occurred to him to try keeping up pressure on the tonsils with lumps of ice. This was done with the aid of forceps, and was completely and permanently successful.—*Prov. Med. and Surg. Journ.*, July 23, 1851.

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36. *Diaphragmatic Hernia of the Stomach, Spleen, and Colon.*—This curious case is published in the *Revue Médico-Chirurgicale*, Juin, 1851. The patient, aged 59, was admitted into the Hôtel Dieu of Nantes, in June, 1850, complaining of pain in the epigastric region, constant vomiting, cough, and purulent expectoration. He died at the end of three weeks. After death the stomach, omentum, spleen, and a portion of the colon, were found in the thorax, having passed through an opening to the left of the pillars of the diaphragm; the opening had smooth edges, and did not exhibit any appearance of laceration. There was no trace of inflammation, either in vascularity or adhesion, so that the inference was that the hernia was congenital, and that the vomiting towards the close of life was in some way connected with the state of the lungs, which were full of phthisical excavations.

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37. *Excision of the Astragalus, successfully performed for Fracture and Dislocation of that Bone.*—Although the history of fracture with dislocation of the astragalus, requiring the extraction of the bone, has been succinctly written, there are comparatively but few cases on record, so that the following instance by M. Thore (*Archiv. Générales*, Mai) is not without value:—

A young man, working in a stone quarry, had his right foot crushed by a fall of stones and earth. When first visited, the foot and leg were enormously swollen, so that it was difficult to ascertain the nature of the injury. The foot was, therefore, enveloped in poultices. Five days subsequently a gangrenous odour was perceptible, and bullæ appeared filled with fetid sanies. At the external aspect of the foot the skin was sloughing, and a portion of the astragalus projected, and was movable in all directions.

Two days after the author decided to extract the bone. After enlarging the wound, the bone was seized in strong forceps, and the ligamentous structures being divided it was readily extracted, leaving a large and deep excavation.

The report five days after the operation is, that the appearance of the limb is much improved, the gangrene diminishing, and cicatrization commencing in certain portions of the wound. Several splinters were extracted, and phlegmonous erysipelas ensued, requiring several incisions for the purpose of evacuating pus; but on the subsidence of this the patient made rapid progress.

An examination of the limb was made at the expiration of the year, when the following were the appearances: Above and immediately behind the external malleolus there was a deep semicircular cicatrix. There was no trace of callus either on the tibia or fibula. The external malleolus is more prominent than the other. The concavity of the sole of the foot was little changed. The foot, which was for a long time movable, in every direction, was at this time quite anchylosed. The patient could walk and even dance without pain, and with facility.

MIDWIFERY.

38. *On Obstetric Practice of the Vienna Lying-in Hospital.*—Dr. Arneth read the following interesting communication to the Edinburgh Obstetrical Society at the meeting April 9th, 1851:—

I have now been connected for three years with the Lying-in Hospital in Vienna, as assistant to one of the Professors of Midwifery in that institution, in whose wards more than 10,000 women have been confined during that time. In the other midwifery clinique, in the same hospital, the number of labours during the same period was still greater; and, through the kindness of my colleagues, I had an opportunity of observing all the important and interesting cases which occurred in their department.

In a woman affected with *abnormal vertical inclination of the pelvis*, there occurred a *central laceration of the perineum* during labour, and through which the child was born. The fourchette anteriorly, and the anus posteriorly, were uninjured.

In the cases of two women, there occurred *prolapsus* of the womb at the full term of pregnancy—in the one complete, in the other incomplete. In both cases reposition of the mass was effected, and labour soon supervened.

There were forty cases of face presentation, and in these thirty-five children were born alive; but of these last, four died in the first days after birth. Two of the mothers died. In no case was instrumental interference resorted to; and for fifty years such has been the practice in this hospital.

Twice (once after a very easy forceps case, and once after a natural confinement) a small part of the os uteri, covered with exudation, was expelled with the discharges. In the second case alluded to, the woman was examined on the ninth day after confinement, and there was found a sharp edge in the os uteri, indicative of the spot where the portion had separated. Both mothers did well.

A patient, in whom the portio vaginalis had been amputated two years previously, became pregnant. The os uteri did not open spontaneously at all when labour came on. Incisions were made in different directions, and shortly afterwards delivery took place. The mother sank ten hours after birth. Post-mortem examination showed old adhesions of the uterine peritoneum.

Incision of the cervix uteri was required only in a single other case, one of carcinoma of the cervix. In this case the mother did well.

Two cases of carcinoma uteri occurred. Living children were born, and the mothers made very good recoveries.

Cæsarian section was never performed, except in cases where we believed the narrowness of the brim of the pelvis to be so great as to render it impossible to drag the perforated child's head through it with safety to the mother. So strictly has this rule been kept, that out of somewhat upwards of 200,000 confinements that have occurred in the Lying-in Hospital of Vienna, between the years 1789 and 1851, the Cæsarian section has only five times been resorted to. All the five mothers died. The children survived the operation, and of some of them there were accounts some years afterwards. Professor Dubois has informed me that he had performed the operation twelve times without having had any successful case; nor is he aware of any practitioner in Paris having been more fortunate. Professor Stoltz, of Strasburgh, lately informed me that he had operated four times out of six with good success—nay, in one case, he was even fortunate enough to see a mother twice surviving this dreadful operation. Everywhere, on the Continent, it is an established rule to perform Cæsarian section in every case of a mother dying pregnant in the seventh month, or later. The essay of Bouchut, which has lately been crowned with the prize of the French Academy, proves that with the last pulsation of her heart the mother dies, and that, consequently, the operation of Cæsarian section may be performed immediately afterwards. In four cases, children were saved by the operation in the Vienna Lying-in Hospital. Two of the mothers died of phthisis, one of eclampsia, one of gangrenous inflammation of the cellular tissue of the neck.

It is a curious fact that—whilst in all cases of midwifery we are bound most carefully to save the lives both of mother and child, and, when that becomes impossible, to do everything in our power for the benefit of the one life we hope to save; that in cases of mortal wounds inflicted upon the mother, or of her being in articulo mortis *for a considerable time* (where the mother is unconscious, and where there is not the least hope to see her restored)—accoucheurs too often delay the operation till unfortunately the child in utero is dead. We are of opinion that, in such cases, and more particularly if we ascertain that the child's pulse is becoming slower and weaker, the Cæsarian operation ought immediately to be performed.

A very frequent cause of the child's death during labour is prolapsus of the funis. We are of opinion that, under certain conditions, the following mode of management has been, generally speaking, much neglected; we mean the artificial replacement of the funis. When the head is presenting, and still movable on the brim, and the os fully dilated, the best plan is to push the funis back, and lay it down in the hollow of the neck of the child. The registers of the Vienna Lying-in Hospital contain forty-three cases of this reposition of the funis. In these, thirty-eight children were born living; and it is only fair to state that, in three out of the five cases of failure, there was scarcely any pulsation in the cord at the time when it was pushed back; and in one other case where the operation had been performed, the labour proved so slow that the forceps were applied for inertia uteri. No hospital report, as far as I know, affords better results of the treatment of a large number of cases of prolapsus of the funis.

The whole prolapsed loop of the funis is taken in the hand, and, pushing the child's head a little back, we lodge it in the hollow formed by the child's neck. It is not necessary to say that the funis is in this way protected on one side by our hand, and on the other by the hollow of the neck, in which it is allowed to lie. There is no reason to fear the occurrence of any injury from compression of the child's head. This operation does no injury to the mother; and, by exciting the uterus to fresh contractions, it sometimes renders the confinement much shorter.

In the cases which have come under my care, the funis, after being replaced, has prolapsed again in only one instance. It was again replaced with complete success. I know, however, the particulars of one case of frontal presentation, where the funis so tightly embraced the forehead of the child that reposition was found impossible.

Sometimes, when it is impossible to feel any pulsation in the prolapsed funis, the child may be still alive. Four such cases came under my notice, where the funis had been pulseless for so long as half an hour, and the children were born living. As there is rarely time, in such cases, to make use of auscultation, my opinion is that, in all cases fit for reposition, it should be performed, unless the funis be very cold and discoloured, or other decided symptoms of the child's death be present.

In the 6608 cases that were under my care, operative interference was resorted to 95 times—that is, nearly once in every 70 cases; 11 of the 95 mothers died—that is to say, 1 out of every 9.

62 children out of the 95 were born living, and 49 survived the ninth day after their birth—that is to say, the day when they used to be dismissed from the institution; so that we lost sight of them after that time.

Turning was resorted to 44 times, or once in every 150 cases; the forceps were used 45 times, or once in every 146 cases; the child's head was perforated 4 times, or once in every 1652 cases. Premature labour was induced twice.

In the post-mortem examinations of some women who died of spontaneous rupture of the uterus, we are at once struck with the immense increase of the size of the fundus uteri, whilst there does not appear to be a similar state of the cervix. It is highly probable that, in such cases, the rupture is brought on by the immense force exercised by this hypertrophied part of the fundus, and which the cervix is unable to resist. The direction of the laceration laterally speaks for this view. The occurrence of rupture is much favoured if the texture of the mucous membrane has been softened by a previous inflammation.

In one case of rupture, the peritoneum alone was affected. The laceration was situated over the fundus of the uterus, and was several inches in length.

One case occurred, in which a woman complained so much of violent burning pains in the abdomen, and was so affected with dyspnœa, that the use of the forceps was deemed necessary. The operation was easily performed. The peculiar characters of the dyspnœa, the complete arrestment of the action of the diaphragm, and the similarity of this symptom to what had been witnessed in a previous case of rupture of the uterus, led us at once to diagnose this as also a case of rupture. For some days after delivery these symptoms almost disappeared, and the pulse improved in character; only a minor degree of asthma persisted. On the seventh day after delivery she commenced to sink, and died suddenly. The uterus was found ruptured at the cervix, but the peritoneum was entire.

There were thirteen cases of eclampsia; four of the mothers died, eleven children were born living. Only one breech presentation occurred; it was in a twin case. All the other children presented with the head. In six cases we resorted to the forceps; the other cases were terminated without artificial interference. We cannot agree with the opinion of Ramsbotham, that the disease occurs most frequently in hot seasons, as there was only one case in May, two in April, four in February, one in December, two in November, two in October, and one towards the end of September. Most of the children (ten) were males; the mothers were, generally speaking, young females, pregnant for the first time. In the post-mortem examinations no morbid symptoms were discovered in the brain. Our treatment consisted in bloodletting, cold water dressings on the head, and the use of tartar emetic. It is worth notice, that very generally after the coma that follows the convulsions, and lasts occasionally for many days, there is to be observed a state of forgetfulness, being sometimes the only remainder of this dreadful disease. I repeatedly saw women who had not the least desire of denying their being pregnant, who could not recollect at all the particulars of their confinement—nay, even of their having been pregnant. This circumstance is most interesting also in a medico-legal point of view.

In the following case chloroform proved very useful. A recently confined woman, who, as she told us, had never suffered from spasms of any kind, complained, a few days after natural labour, of fever and pains in the abdomen. These symptoms, however, subsided in a short time. A few days afterwards she suddenly began to howl like a dog, to contract her face in a most ridiculous manner, and to be exceedingly restless. As often as we put some chloroform under her nose, she regained her consciousness, and, when asked, complained of no pains at all; but the aforesaid symptoms reappeared immediately when the chloroform was removed. These symptoms lasted for three hours, when we put her, by means of chloroform, into profound sleep; at once all the symptoms yielded, but re-appeared in a few minutes after she awoke. I applied chloroform for a second time, and allowed her to remain under its influence for about one hour and a half. After that time she remained entirely free from the symptoms of threatened mania.

From the few cases where chloroform was used in our midwifery practice, and these were all cases of long-lasting and exhausting operations, it would appear that this medicine has a particularly soothing influence on the vascular system; for in all these cases the heart's pulsations were, after delivery, scarcely quicker than in a healthy person; and I may here observe that, in the Vienna Hospital for the last two years, nearly all surgical cases have been anæsthetized when operated upon.

In cases of hemorrhage after delivery, if there are no clots or portions of the afterbirth in the womb, contractions are, if possible, excited first of all by frictions. In the very rare cases where the frictions have no effect, we resort to cold water dressings externally; and if these prove inefficient, we inject cold water into the uterus. This treatment has been so successful that, out of more than 20,000 cases that occurred in the clinique since 1833, there are only two cases on record of women dying of post-partum hemorrhage; that is to say, one of a woman where assistance was only resorted to when she was already moribund, and the second a female taken with small-pox, where every means proved inefficient.

In the period extending from 15th October 1847 to the end of October 1848, only one out of 128 mothers died. The mortality increased in November, and still more in December, when one mother died out of every fifteen delivered.

These unfavourable results were undoubtedly caused by the political events of that period. It is not necessary to state how depressed in the mind the most of the women confided to our care must have been at a time when their friends, fathers, and brethren fought either in the ranks of the rioters or in those of the soldiery. But, moreover, one of the wells that supplied some of the yards of the large hospital with water was destroyed by the troops. The consequence was that that cleanliness could less effectually be looked for which we may boast is maintained at other times in our hospitals. The supplies of straw, coverlets, and so on, were also intercepted.

Towards the end of October, when the stores were almost exhausted, and no fresh provisions arrived, many women were confined, and the consequent disease became more fatal in December.

The first cases of puerperal fever that came under our care, showed in their beginning no other symptoms than sores near the fourchette that extended widely into the vagina, and over the perineum. They appeared about the sixth day after confinement, were uneven, of a grayish colour, and covered with a corroding matter; they bled very seldom. Sometimes they healed by granulation, but this went on very slowly, the patients meantime becoming extremely emaciated. Other cases proved fatal, the post-mortem examinations showing inflammation of the mucous membrane of the uterus and of the peritoneum, and, more generally still, of phlebitis.

In the subsequent course of this epidemic of puerperal fever, peritonitis, at other times peritonitis combined with pleuritis, were the more general symptoms. In the course of three days I had the sad opportunity of seeing two cases of phlebitis, ending in the destruction of the eyeball by metastatic purulent deposits. In the first case, only two hours, in the second, eight hours, elapsed between the first symptoms of disease appearing in the eye, and the lamentable catastrophe. It was highly interesting to observe how entirely puerperal fever ceased in our wards after cholera made its appearance. During the month of May and the first days of June, eleven mothers died of puerperal fever; on the 10th of June we saw the first patient under cholera, and had occasionally cases of it till the 11th of August. During this whole period we had only very few patients complaining of the slighter puerperal symptoms, in no case ending fatally. Almost immediately after the disappearance of cholera, the cases of puerperal fever became somewhat more frequent, and decidedly more dangerous.

Prof. Kiwisch, late of Wurzburg, now of Prague, has recommended a new method of inducing premature labour, which, being decidedly the least troublesome and the least dangerous to the mother, has now been repeatedly resorted to, both by Professor Kiwisch and the leading men of the Vienna midwifery department. This means consists in the use of a douche of tepid water falling from a height of about ten feet, the stream being allowed to impinge upon the os uteri, and thus to open it in a short time. This plan is peculiarly adapted for cases of contraction of the pelvis, where you have sufficient time to use any advisable method to bring on premature labour. It is much less serviceable in cases of urgency, as it is quite impossible to state beforehand how many applications of the douche will be necessary for that purpose. The average hitherto has been about ten applications; we used to apply them twice a-day for a quarter of an hour each day.—*Monthly Journal Med. Sci.*, July 1851.

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39. *Method of inducing Premature Labour.*—Dr. Moir made the following statement to the Edinburgh Obstetrical Society, as to a mode of *inducing premature labour*, which had been first adopted, he believed, by the late Dr. Hamilton, and which Dr. Moir and his father had almost invariably practiced, with very considerable success. Dr. H., conceiving that many children were in these cases

lost by the pressure on the head consequent on the premature rupture of the membrane, then the usual method of inducing premature labour, tried the plan of gently opening and dilating the os uteri with the finger, and, if the pelvis was very deep, cautiously using some rounded blunt instrument, such as a large-sized male bougie, with the view of separating the membranes from the surface of the uterus for two or three inches up from the os uteri all round; this being repeated every second or third day, according to circumstances. The consequence of this procedure was that in eight or ten days at the most the os uteri became considerably opened and relaxed, the membranes protruding somewhat; so that, when labour came on, everything proceeded very much as in a favourable natural labour. If, however, labour did not come on in eight or ten days, he took a male catheter, from which the point had been cut off, and introduced it for some four or five inches along the posterior surface of the uterus, between it and the membranes; then turned the point inwards towards the membranes, and then pushed forward to the extent of the eighth or tenth of an inch the point of a silver wire which had been previously lying within the catheter to its very point. With this he penetrated the membranes, and allowed two or three tablespoonfuls to escape along the catheter, and then withdrew it. The pressure of the uterus on the puncture prevented further escape of the water; and in every case but one, where Dr. M. had to repeat this puncture, labour came on within thirty-six hours—the membranes at the os uteri remaining entire, and assisting to dilate the os uteri. Dr. H. had thus operated between forty and fifty times for deficiency of space in pelvis, and all the children except four had been born alive.

Dr. M. and his father had performed it above twenty times, and, though not with so much success to the infant as Dr. H., yet all the parents had recovered perfectly, and in almost every case when the child was lost, it arose from its being still too large for the aperture through which it had to pass; and even then, these cases had this advantage, that the mother suffered less than if she had been allowed to go on to the full time, and recovered rapidly.—*Ibid.*

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40. *Induction of Premature Labour.*—Dr. Simpson observed, in a discussion at the Edinburgh Obstetrical Society, in relation to the induction of premature labour, that for many years past he had followed the plan of dilating the os uteri, and perhaps, he might add, separating the membranes also, by the introduction of sponge tents. He thought it a more certain, more efficient, and more safe mode, than any of the others that were used. He had now employed it in numerous cases, without ever finding it once to fail; always with perfect success in regard to the mother, and in a large proportion of cases with safety as regarded the child. It had the advantage, like Dr. Hamilton's plan, of not rupturing the membranes; and thus allowed the child to be protected by the presence of the liquor amnii during the process of labour. It also had other advantages. It was, Dr. S. believed, more easy of employment than almost any other method. When adopted, and when the os uteri was dilated by a succession of sponge tents, the first stage of labour (that is, the dilatation of the os uteri) was really in many cases to a considerable extent accomplished before labour itself began; and consequently the child was saved from the pressure, &c., incidental to the earlier and sometimes protracted part of the first stage. It was, as a general rule, speedier in its operation than any other plan proposed. Dr. Arneth had seen with Dr. Simpson a case in which Dr. S. employed it. In this instance labour pains came on within two hours after the first tent was introduced. In the same patient, in her last confinement, when premature labour was also brought on, the whole process of delivery was over in twelve hours after the induction of premature labour was commenced by the introduction of the first sponge. Latterly, in using sponge tents for this purpose, Dr. Simpson had always begun by introducing a pretty large tent, one at least as thick as the little finger; and (sometimes without withdrawing the first) he has introduced a larger and larger size every six or eight hours. Usually, he requests tepid water to be thrown up into the vagina every hour or so after the first tent has been introduced. This of course is with the view of supplying a sufficient

quantity of fluid to expand the compressed sponge. Dr. Simpson had tried in one case lately, the plan mentioned by Dr. Arneth, of injecting tepid water. It was in an instance where the patient had repeatedly found the child to die a short time after quickening, and retained it for six or eight weeks subsequently. During her last pregnancy, the same occurrence took place with the same symptoms. A few weeks having elapsed, she threw up tepid water, at Dr. Simpson's request, twice a-day, with a view of bringing off the dead fœtus. After nine douches, applied night and morning with a common syringe, expulsive pains came on, and a dead and shrivelled fœtus and placenta were expelled. As to the mode in which the injection of tepid water acted in inducing premature labour, Dr. Simpson had some doubts whether Kiwisch's explanation of it, that it led to relaxation of the soft parts by the imbibition of the water, was a true explanation. He had a belief that, when a douche of tepid water was strongly thrown into the vagina, it did not always escape readily out of the vaginal orifice, but accumulated in that canal, and by its accumulation and distension opened up the cervix uteri, and ultimately even separated the membranes. If it acted by mere imbibition, then Dr. Simpson imagined that it might be of use in midwifery in a way not thought of by Kiwisch. If we had any means of relaxing the soft structures of the mother for two or three days before delivery, we would be enabled to curtail the duration of labour, and consequently to diminish its mortality. We might in this way, for example, make first labours as speedy and hence as safe as future ones, which at present they by no means are. In Great Britain, if all the children born for one year were girls and no boys, Dr. Simpson had elsewhere attempted to show that six or seven thousand infantile and maternal lives would be preserved. And if we could make the birth of boys as expeditious as that of girls, a great number of lives would be saved annually. The question recurs, would douching the vagina for two or three days before delivery, produce such a relaxation of the maternal passages as to facilitate labour to the requisite extent?—*Ibid.*

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41. *Epidemics of Puerperal Fever.*—In an extremely interesting discussion which took place at the meeting of the Edinburgh Medico-Chirurgical Society, April 16th last, on the reading of a paper by Dr. Arneth on a cause of puerperal fever at the Lying-in Hospital of Vienna, Dr. Moir made some remarks on a few of the epidemics of puerperal fever in hospital and private practice, as detailed in the late Dr. Hamilton's lectures, and on some facts tending to prove the contagious nature of that disease.

1. During 1814 and part of 1815, nine women had puerperal fever in the Edinburgh Lying-in Hospital, and only one recovered.

2. In 1830, between 18th September and 5th November, out of forty-eight patients delivered, eighteen had the disease in a well-marked form, of whom sixteen died; the two who recovered were the last cases, and insisted upon being taken home to most miserable apartments. They both slowly recovered—one after the discharge of a considerable quantity of dark offensive matter per vaginam.

3. During the above epidemic in 1814-15, three cases occurred in the private practice of the matron of the hospital, who at that time was much employed as a midwife.

4. In Dumfries and neighbourhood, during 1813, twenty-seven individuals in the better ranks died from this affection in about six weeks; and only one affected with it recovered—a discharge of pus from the umbilicus having in her occurred about two months after delivery.

5. In the summer and autumn of 1823, Dr. Kellie had a number of cases in Leith and its vicinity. The first cases occurred at Inveresk, early in May; and the fifteen patients whom he delivered in succession afterwards, or sixteen in all, were affected with the disease, and all died.

6. Dr. Hamilton saw one of these cases in consultation on the 6th May. On the 8th, he delivered a lady of her third child in Gayfield Square; she had the disease, and died on the eighth day.

7. In May and end of June of the same year, Dr. H. saw two cases with the late Dr. Beilby, one of whom recovered. On the 7th July, he delivered a lady of

her first child, after an easy labour. On the fourth day she was seized with the disease, was bled copiously more than once, and sunk next day.

8. Dr. M. mentioned several instances of individual pupils of the hospital having had a succession of cases in various quarters of the town; while other pupils, as extensively engaged at the same time in midwifery practice, and in the same localities, had none.

9. Dr. M. read the copy of a letter, sent in Feb. 1824 to Dr. H. by a Dr. Reid, an old pupil, in which he says: "That puerperal fever is contagious, I think I shall be able to adduce some tolerably good proofs. In 1817 I visited Ireland, and attended gratuitously a number of poor. The third woman I attended in labour was attacked with puerperal fever; and from that time not one escaped it who came under my care. After my return to London in the autumn, I was called to a labour, on which occasion I happened to be dressed in some of the clothes I had worn in Ireland; and that woman was seized with the fever, as were two others, whom I attended a few days subsequently. On a voyage to New South Wales, several weeks afterwards, in the Atlantic Ocean; a soldier's wife was taken in labour, and, being badly provided with necessaries for the occasion, I gave her some old sheets, and a piece of garment, which had been packed in one of my trunks at the time I was attending the puerperal cases in London; and she was attacked with the fever two hours after delivery. Four other women were confined on the voyage, and all had the disease."

After commenting upon the contagious nature of this fearful disease, as indicated by the preceding facts, Dr. M. stated that it was mentioned in Dr. Hamilton's lectures, that when puerperal fever prevailed in the lying-in ward of the Royal Infirmary, all the sores in the surgeon's ward, which was on the same floor, were in a very bad condition; and erysipelas followed every operation, however trifling; and that Dr. Kellie had also observed that, during his attendance on the cases occurring in his practice in 1823, there was inflammation of one or more veins of the lower extremities, accompanied in some with erysipelatous efflorescence on the surface. From which facts Dr. H. had, at one time, concluded that there was a strong connection between erysipelas and puerperal fever, though he changed this opinion in after life from not finding them always to go together.

Dr. M. next related at length the particulars of three cases which had occurred lately in his own practice, and which in several ways deserved the consideration of those engaged in obstetric practice. He delivered a patient, A., on the 8th February, at midnight; another, B., early on the morning of the 9th; and on the 10th, in the afternoon, a third, C. The infant of A. having died early on the morning of the 10th, and, it being wished to ascertain the cause of death, Dr. M. opened the body that evening, some time *after* having delivered C., and, much to his surprise, found the cavity of the right pleura so completely filled with a sero-purulent effusion, that no air had penetrated that lung, which was otherwise quite healthy. He ordered the nurse not to approach his patient till she had changed her clothes, and washed carefully with chloride of lime; and he did the same. On the morning of the 14th this nurse was found feverish, and suffering considerable pain in one arm, from inflammation of the lymphatics. It was ascertained that she had pricked her finger a short time previous to the opening of the baby, some of the matter from which had doubtless been absorbed, and given rise to the above symptoms. Dr. M. afterwards visited A. and B., about ten o'clock; and did not see C. till next day. On the evening of the 12th, A. had slight rigors; on the 13th and 14th, pulse was very rapid; but on the 15th fell to 80, and she seemed altogether better; but that evening rigors again supervened; the pulse became rapid, and skin variable. Erysipelatous efflorescence appeared soon after on the left leg. Tympanites also supervened some days before death; but there was from the first little or no pain or uneasiness of abdomen, or of any part of the body, except the knee of the affected leg, and the back of the shoulder and right side for three or four days before death, which occurred on the 24th. The appearances on dissection were unusual, there being no trace of peritoneal inflammation or its consequences, and no apparent affection of the uterus, its appendages, or vessels, except redness of one of the Fallopian tubes, and in two small spots a substance, of a whitish colour, apparently like pus, where the placenta seemed to have been attached. The left knee-joint was distended with sero-purulent fluid. The muscles and cellular membrane on the back of the shoulder and right thorax were infiltrated with a dark sanious fluid. The large veins were distended with blood, and their walls thin and almost transparent, but their internal coat healthy. The blood in the great veins very fluid, watery, and uncoagulated; and, when examined microscopically, containing white corpuscles in greater numbers than usual.—B. was seized, early on the 13th, with rigor and violent pain of abdomen, which continued for nearly a fortnight; during which time effusion took place into one pleura, and soon after it into the other; but, though exceedingly prostrated and worn out, she is still (about a month from the attack) alive, and it is hoped may recover.—C. was also seized with rigor early on the 13th; pain confined to the uterus, which was hard and painful on pressure; was leeched over it, and so far relieved that on the 15th her pulse was in the morning down to 90, and soon after mid-day to 72; yet the symptoms became aggravated, and she died on the 19th.

Dr. M. called the attention of the members to the great difference of the local symptoms in all the three cases; the pain in C. being chiefly confined to the uterus; in B. to the peritoneum generally, the whole abdomen being exquisitely tender to the touch; while in A. there was neither pain of the abdomen nor of its contents during life, nor morbid appearances after death, with the slight exception already mentioned. And he lastly requested their particular attention to the probable exciting cause in the three cases, or to the manner in which the disease had been communicated; because, believing, as he did, in its contagious nature, it appeared to him a question of great importance to trace out the cause. At first sight, it might appear that the most probable cause was the communication of some morbid matter from the opening of the fœtus, it being admitted that the application of the inflammatory products effused on mucous or serous surfaces may communicate the disease, as amply proved by Dr. Arneth's paper, as already read; but, on more particular attention to the subject, there were several great difficulties in admitting this as the cause in these cases, as all the patients had been delivered *prior* to the opening of the body; as the hands were well cleaned with chloride of lime, and the clothes changed, before *two* of the patients were visited that night, and as the *third* was not seen till next day, and as in none was any vaginal examination made by Dr. M. *subsequent* to the sectio. Dr. M. then submitted what to him appeared, on a careful review of all the cases, as the cause. He believed that there must have been some peculiar condition of A.'s system, which had been not only the cause of the disease discovered in her infant, but also of the subsequent symptoms in her own case, and which had communicated to Dr. M. some virus or *materies morbi*, which had been the means of inducing the disease in the other two patients. In support of this, there was: 1st, the state of the infant, which was well grown, and in every way healthy, with the exception of the sero-purulent effusion into the right pleura; and that this was dependent on some morbid condition of the mother, was borne out by there being, 2d, for some days previous to labour coming on, a feeling of occasional faintness and of listlessness, very foreign to her usual habits; 3d, by the difference in the nature of the labour, which on former occasions was generally very rapid, and without premonitory symptoms—whereas, on the present occasion, besides supervening a fortnight before her full period, there was a threatening of labour for four days, during the whole of which time Dr. M. was frequently in attendance on his patient, often for a considerable period at a time; 4th, by the scanty or almost total want of secretion of milk, whereas on all previous occasions it was very abundant; 5th, by the slight rigors, which in attacks of puerperal fever are generally more severe; 6th, by the total want of the usual local pain in the regions of the uterus, its appendages, or the peritoneum; and 7th, the appearances after death. From the preceding facts, Dr. M. inferred that the disease in this case, A., was the result more of some primary morbid state of the system than connected with any local cause, such as the application of morbid matter to the vagina; that, moreover, this condition had existed prior to delivery, as indicated by the state of the infant, and the symptoms both prior and subsequent to delivery; and lastly, that, as he had been in such close attendance on this patient for four days, he most probably was the means of conveying some infectious matter to B. and C., the former of whom was delivered about two hours after he left A.'s house subsequent to her delivery, and the latter on the next day.—*Ibid.*

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42. *On the Contagiousness of Puerperal Fever.*—Dr. Simpson made the following interesting observations on this subject, in a discussion at the Edinburgh Obstetrical Society. He expressed a similar opinion of Dr. Moir's series of cases to what Dr. Moir himself had given—viz. that the original focus of contagion in them was to be traced to the diseased blood and tissues of the mother who was first delivered and first attacked—that her blood had affected the infant which she carried within her—and that probably the vaginal secretions and discharges from the said patient during labour had unhappily formed the virus or material which had been unwittingly carried by Dr. Moir, so as to affect his other patients. It was only by careful and searching analysis of cases of puerperal fever, like Dr. Moir's, when they did occur, that we could hope ultimately to arrive at a knowledge of all the various ways and means in which the disease may originate or be spread, and consequently of all the different means which may be adopted to prevent its spreading. Dr. Hill of Leuchars has described one instance which was interesting in this respect, that, as in Dr. Moir's, both the mother and the child seemed affected before delivery. A carpenter had his hand wounded and poisoned with the discharge issuing from a dead body whilst placing the corpse in the coffin. A severe attack of erysipelas followed. Subsequently his wife had a similar attack of erysipelas. Their daughter living with them, and in the seventh month of pregnancy, was then taken with an attack of fever. In a day or two, she gave birth to a dead child, whose body had all the appearance of being affected with erysipelas, as the arms of the mother's parents previously were. The mother herself died within twenty-four hours, with the symptoms of malignant puerperal fever. On his road home, from visiting this patient, Dr. Hill was called to a case of labour, and this other was also attacked with puerperal fever. Dr. Arneth's very valuable paper adduced what was apparently incontrovertible evidence of puerperal fever being propagated in the way he suggested—viz. by medical men carrying on their fingers matter capable of producing it from bodies which they were dissecting, and inadvertently inoculating that matter into the mucous membrane of the vagina of patients in labour. In these cases, the fingers of the accoucheur acted like the ivory points or ivory lancets of the old inoculators and vaccinators—that is, when once dipped in the poison, they might retain it till they had again inoculated that poison into the bodies of other healthy subjects. The vaginal mucous membrane was generally stretched and abraded in labour, the perineum was often slightly torn, and the whole afforded a surface in a condition easily inoculable. But if students and practitioners, with their hands containing some portions of morbid matter act thus, by inoculating that matter on the abraded surface of the vagina, produce puerperal fever, no doubt, under similar circumstances, surgeons could and did inoculate into the wounds which they made or dressed, similar matter producing the similar disease of surgical fever in their patients. If it could be inoculated into the abraded surface of the vagina, it could be inoculated into a recent wound. If it produced fever in the one set of patients, it would produce fever in the other. And, since bringing under the attention of the profession the communicability of surgical fever, Dr. Simpson stated that he had heard various facts in regard to it, all of which more and more convinced him that surgeons, like accoucheurs, were occasionally the unhappy media of inoculating their patients with morbid matter, producing in them surgical fever, as in puerperal patients, obstetricians, by the same means, produced in their patients puerperal fever. He had no doubt that it would take many long years fully to convince surgeons of this fact; but still it was his conviction that surgeons would ultimately both believe and act upon it, and that their doing so would be a means of preventing many of the numerous deaths which now occur after operations, particularly in hospital

surgical practice. The mortality in most lying-in hospitals upon the Continent of Europe was very much higher than the mortality in the same institutions in Great Britain and Ireland. He did not think that the diminished mortality amongst us was in any way owing to the fact of superiority on our part in obstetric practice, but it was owing to the fact of British accoucheurs generally having a belief in the contagious communicability of puerperal fever, and taking their measures accordingly. He was sincerely of opinion that the want of that belief was a great cause of mortality in the continental lying-in hospitals generally, and that in them many lives were yearly sacrificed to medical prejudice, in the want of a proper belief, on the part of the medical men in charge of them, in the contagious communicability of puerperal fever; and in such a fatal disease it was ever to be recollected that prevention was a far mightier object than cure. Already, by Dr. Semmelweiss' belief in the contagious propagation of puerperal fever, and by the hygienic means which that belief suggested, several hundred maternal lives have, within four years, been saved in the Lying-in Hospital of Vienna. If one hospital could afford such results in four years, how many maternal lives might be saved over the Continent of Europe, provided all the practitioners of Germany, France, Denmark, &c., could be as thoroughly impressed with the contagious character of puerperal fever as British practitioners and hospital accoucheurs now generally were! Continental accoucheurs generally did not understand exactly the kind or description of evidence upon which British practitioners founded their belief in the contagious communicability of puerperal fever. Some of the continental writers on this subject seem to imagine that British obstetricians believed that puerperal fever was usually propagated directly from one patient to another, and, not seeing this occur, when a puerperal fever patient, in their continental hospitals, lay by the side of another healthy woman, they imagine that from this fact they had a disproof of the opinion of the contagious communicability of the disease. But in this country we do not believe that the disease is usually propagated in this way, directly from individual to individual, but indirectly, through the medium of a third person, and that person generally the medical attendant or nurse. But that it was so propagated by the medical attendant or nurse, we further believe upon the following species of evidence—viz., that it was, as in Dr. Moir's late cases, and in most other instances, distinctly and precisely limited to the practice of one or two practitioners only, out of a large number of medical practitioners, practicing in a large community. Many examples were recorded, and many more unrecorded were known to the profession, of the disease being thus limited to the practice of a single practitioner in a town or city; all, or almost all, the patients of that practitioner being affected with it, where none of the patients of other practitioners were seized with any attack of the disease. In these cases we could not believe it to be owing to any morbific influence present in the air, or emanating from the locality in these cities or towns. For, if so, it would affect indiscriminately the patients of all practitioners. But it had been often seen, as it was just now remarked, to haunt the steps of a single practitioner, and a single practitioner only, in a community. Many instances of this were known and published. One would suffice for illustration. Dr. Roberton, of Manchester, tells us that, in 1840, upwards of 400 women were delivered by different midwives in connection with the Lying-in Hospital in Manchester. These 400 women were delivered in different parts of the town at their own houses: 16 of them died of puerperal fever; all the others made good recoveries. Their production could not have arisen from any general epidemic, or atmospheric, or telluric influence; for the fatal cases occurred in no one particular district, but were scattered through different parts of the town. Now these 400 and odd women were attended in their confinements by twelve different midwives. Eleven of these twelve midwives had no puerperal fever amongst their patients. The sixteen fatal cases had occurred in the practice of one only of the twelve. The disease in fact was limited entirely to her patients. There must have been something, then, connected with that one midwife, in which she differed from the other midwives, inasmuch as all her patients took the disease, whilst the patients of all the other midwives escaped from it. And in medical philosophy we cannot fancy that this something consisted of aught else than some form of that morbific principle or virus to which pathologists give the name of contagion. Further, that the disease is really in such instances propagated by this third person (the physician or the nurse) carrying to the parturient patients a virus capable of producing the disease, is shown by this kind of additional evidence: That, when the disease has broken out in the practice of one accoucheur, it will spread to the practice of others of his obstetrical brethren, provided they put themselves in a condition so as to carry off the contagious virus from the patients of the first practitioner. In 1836 or 1837, Mr. Sidey of this city had a rapid succession of five or six fatal cases of puerperal fever in his practice—at the time when the disease was not known to exist in the practice of any other practitioners in this locality. Dr. Simpson, who had then no full and proper belief in the contagious propagation of puerperal fever, attended the dissection of two of Dr. Sidey's patients, and freely handled the diseased parts. The next four cases of midwifery which Dr. Simpson attended were all affected with puerperal fever, and it was the first time that he had seen it in practice. It was upon evidence of this kind that British pathologists generally reckoned in founding their belief on the contagious communicability of puerperal fever. And it was evidence of this kind which had intuitively driven them to adopt those means of prevention or avoidance, which are so highly necessary, in order to arrest the propagation of this fearful malady. The measures proposed and so successfully adopted by Dr. Semmelweiss in the Vienna Hospital were beautiful from their mere simplicity, but they were full also of a great lesson to us all. They proved, in a manner beyond all dispute, the great importance of carefully ridding the fingers from all matters in the least degree likely to prove hurtful, if inoculated into the vagina of a puerperal patient. And no doubt, as Dr. Arneth had remarked, such matters were always present in the fingers as long as, despite even of common ablutions, they emitted a disagreeable animal odour, the presence of that odour being a perfect proof of the presence of morbid matter capable of producing the odour. Dr. Semmelweiss and Arneth recommended, for the purpose of ridding the fingers of this morbific matter, the use of chloride of lime. Dr. Simpson had used for the same object for years daily (or rather generally often during the day) a solution of cyanide of potass, which was more effective even than chloride of lime, and had this other advantage, that it removed readily and at once all such stains as the fingers of the accoucheur were apt to receive in treating uterine diseases—with nitrate of silver, iodine, and the like. Dr. Semmelweiss believed that animal matter, in a state of *putrefaction*, was the material which constituted the inoculable virus capable of being transmitted to puerperal patients, and of producing puerperal fever in these patients. Dr. Simpson had strong doubts as to the idea of this matter being necessarily putrid being correct. We see cases in which animal substances are allowed to putrefy within the vagina, and to be applied to the mucous membrane of that canal, without producing puerperal fever. When a polypus, for example, was ligatured, and left in the vagina, it often was killed and putrefied there for days before the stalk was completely cut through by the applied ligature. And yet in these cases the patient had little or no liability to attacks of disease like puerperal fever. Besides, in these cases, the other condition is present, of an abraded surface, as well as putrid matter in contact with that surface, for the vagina was sometimes no doubt more or less injured in its mucous surface while passing the ligature; and the ligature itself always made a raw, open, and inoculable surface, as it cut through the pedicle of the tumour. Surgery on other parts of the body admitted of many similar proofs against this doctrine. Dr. Simpson had always believed and taught another theory, but not perhaps a perfectly correct one, in regard to the nature of the contagious material. He believed that generally, if not always, the material which, when carried from one subject to another, could produce puerperal or surgical fever in a newly inoculable subject, was an *inflammatory secretion*, just as the inoculable matter of small-pox, cow-pox, syphilis, &c., was an inflammatory secretion. The case adduced by Dr. Arneth, of puerperal fever breaking out in the hospital apparently in consequence of matter being conveyed from cancer of the uterus to a series of puerperal patients, was not so strong an argument against the view as might at first sight appear. For the cancer patient was, according to Dr. Arneth's own account, several days in labour, the carcinomatous degeneration of the cervix preventing the opening of the os. And there can be very little doubt that, by the end of several days, the carcinomatous structures were in a state of inflammation, and probably gangrenous decomposition, from the protraction of parturition. At all events, if the carcinomatous cervix was really putrid, it was in all likelihood putrid from the result of gangrenous inflammation in its compressed and irritated structures. But, be this the case or not, it was important to remark that obstetricians had now very decided proof of various kinds of morbid matters which were capable, when inoculated into the vagina, of leading on to puerperal fever. For, first of all, when the bodies of patients who died of puerperal fever were opened, the inflammatory effusions in the abdomen and elsewhere, when brought in contact with the fingers of the accoucheur, were capable of producing the same disease in other healthy patients, upon whom they were accidentally inoculated. In other words, the morbid effusions of puerperal fever in one woman were capable of producing puerperal fever in another woman, when inoculated into her system. But, secondly, the same seems to hold true with regard to the secretions coming from the bodies of such patients, even when they did not die and were not dissected. Dr. Simpson alluded to the cases, for example, of nurses and midwives, whose fingers came into contact with the discharges from the vagina of puerperal patients, giving the disease to other parturient women, and who had not of course, in the way of post-mortem examinations, been bringing their fingers in contact with the more internal secretions. Dr. Gordon mentions more than one case of this kind in relation to midwives, in his history of the Aberdeen puerperal epidemic. Thirdly, he believed that the cases recorded by the late Mr. Storrs, Hutchinson, Ingleby, and others, sufficiently proved that the inflammatory secretions in some other inflammatory diseases besides puerperal fever, when carried by the medical attendant, and inoculated into the maternal canals of a parturient female, were sometimes capable of producing in such females true puerperal fever. This seemed more particularly true with regard to the inflammatory effusions in erysipelas and gangrenous inflammation of the limbs, scrotum, vulva, or other part of the body. That the morbid matters thrown out in those more subacute forms of disseminated or phlebitic inflammation, which sometimes occur after delivery, were capable of producing puerperal fever when inoculated into puerperal patients, was a fact of some importance to hold in view. And the following recent case will perhaps impress the truth of it. A short time ago, Dr. Simpson was requested to see a case of pelvic abscess in a patient delivered for four or five weeks previously. The abscess was artificially evacuated, but only with partial relief; as there were evidently other local inflammations going on, both in the abdomen and chest. The patient died about six or seven days after delivery. The practitioner who originally attended her, and who had no puerperal fever cases in his practice, was not able to be present at the dissection. Another able medical practitioner—whom he had called to the case after the inflammatory attack had begun—opened the body. Though an excellent and well-informed physician, he rather decried any fear about the possibility of contagion, when Dr. Simpson suggested it to him as he came into the room, and found him opening the body. This gentleman had no puerperal fever cases in his own practice; but within fifty hours after opening this body, he happened to be called to five cases of midwifery. Four of these patients were attacked with puerperal fever, three in a very severe, and one in a mild or abortive form. The fifth patient altogether escaped, the child having been born before the practitioner's arrival. Fourthly, there were one or two recorded circumstances which would lead one to the belief that some varieties of febrile exhalations, received by inhalation into the blood of a newly-delivered woman, are capable of producing in her a disease analogous to, if not identical with, puerperal fever, the effect being the same as if morbid matter had been introduced into her blood, not by inhalation into her lungs, but by inoculation and imbibition into the vagina, just as in the spreading of small-pox we see the disease liable to be produced in two ways—first, by the direct inoculation of the morbid inflammatory matter contained in pustules on the arm of a healthy individual; or secondly, by individuals inhaling the morbid effluvia from the bodies of patients labouring under the disease, without being inoculated into them. Dr. Collins mentions an instance in which a patient was admitted into the Dublin Lying-in Hospital, labouring under a bad form of typhus fever. Two puerperal females, who occupied the adjoining beds, were attacked with puerperal fever, and died. In another instance, in the same hospital, a similar accident happened. A patient labouring under typhus fever was admitted into one of the small wards of the house, which contained only some four beds—all the three other women were attacked with puerperal fever, and two of them died. But we had no very decided evidence, as far as Dr. Simpson knew, from hospital observation, that a woman labouring under puerperal fever could, by the exhalations from her body, infect with the same disease other patients lying near her in the same ward. Fifthly, some accoucheurs believe in the possibility of the imbibition of the effluvia from typhus or puerperal fever patients by the clothes of the medical attendant, and that the subsequent inhalation of such matter by the parturient female might be a means of artificially infecting that female with the disease. Dr. Simpson could not doubt that the saturation of the bed-clothes, &c. with the discharges of a puerperal fever patient might give the same disease to another puerperal patient who was laid in them. This, and one or two other circumstances, were enough to show that, for safety's sake, it was always well to act upon the possibility of the clothes even of the medical attendant being thus a medium of contagion. In some observations on the subject of the contagion of puerperal fever, Dr. Merriman states, that he once attended the dissection of a puerperal patient, but did not touch the body or any of the parts. The same evening he attended a lady in labour, and she was attacked with the disease. In his account of the Aberdeen fever, Dr. Gordon mentions that a man-servant appeared to carry the infection of the disease from his sister in Aberdeen to his wife in the parish of Fintry, six miles from Aberdeen. The midwife who attended this woman infected two other parturient patients in the same parish soon afterwards, both of whom died. If a statement of this kind could be established as a fact, by careful analysis of the requisite evidence, it would be a matter of importance, as adding to our knowledge of the modes in which this disease may be propagated. In the instance which Dr. Moir had mentioned, of Dr. Hamilton visiting the patient of another practitioner affected with puerperal fever, and immediately after having several cases in his own practice, it was not at all unlikely that he had made some examination of the patient, or, at all events, without proof that he had not, it would not be proper to conclude that the disease in that instance could be carried by the clothes of the physician acting in the way of *fomites*. The history of the other case adduced by Dr. Moir, of the fever breaking out on ship-board, when bed-clothes had been used which had been employed previously in the beds of women who had died of puerperal fever, would be exceedingly important in the way of proof, if it had been more substantially reported and authenticated. One can scarcely believe that such clothes should be shipped off after being thus used, without having been previously thoroughly washed and cleansed. Dr. Simpson had also been informed of an instance, by Professor Patterson, in which a medical gentleman, after having lost several cases of puerperal fever, got rid of the disease in his practice by changing his clothes, and using chloride of lime, &c., but it again returned to him when he happened to deliver a patient, immediately after wearing a pair of gloves which he had used during the time of the puerperal epidemic; and certainly, if there was any piece of dress more apt to retain the contagion than another, it was this useless and superfluous appendage to our attire; for it might retain the morbid secretions that were originally on the fingers of the accoucheur, just as our vaccinating glasses would retain the cow-pox matter. Again, in a small ward or small hospital, one could almost, as it were, produce puerperal fever at will, by crowding a great number of puerperal patients together in the same ill-ventilated room. The discharges from the different patients in a few days render the air of such a room so loaded and morbific as to be oppressive to all entering it, and capable of producing febrile action by the inspiration of it, in those puerperal patients who occupied its beds. This no doubt was true when this experiment was driven, as it sometimes accidentally had been, to an extreme. But it was true also in its lesser degree; for Dr. Simpson believed that one great cause of weed, ephemera, and febrile attacks during puerperal convalescence, was the still too slight attention that was paid to the ventilation of the lying-in chamber. He had repeatedly, he thought, seen more or less slight febrile action set up in a patient, from her curtains being closely drawn around her bed for eight or ten hours during the night, being thus obliged to breathe an air loaded and affected with the morbid animal discharges from her own body. Dr. Arneth had not alluded to the question, Whether the disease was ever caused or not, or a predisposition at least given to it, by epidemic influence? Dr. Simpson believed that we ought not to forget altogether the possibility of epidemic influences acting directly or indirectly in the causation of it. During the present century, the disease had nearly, in two or three instances, as in 1819–20 and 1829, prevailed in most of the cities and lying-in hospitals of Europe. And it was difficult or impossible to account for this simultaneous existence everywhere, without believing that everywhere there was some general epidemic cause tending to its production. In this the history of puerperal fever did not differ from the history of other contagious febrile diseases. During the latter part of the last century, for instance, small-pox contagion existed in almost every town and village in England, because in almost every one of them there were artificial causes operating to produce and perpetuate the disease, inoculation being very generally practiced. But it was only in particular years, and sometimes at a considerable distance of time, that the disease became epidemic. And when it did so, it was owing to other causes being in action in addition to the mere inoculation. Nay more, in some conditions, as during the blowing of the Harmattan wind, we know that small-pox and cow-pox cannot be propagated even by direct inoculation—facts showing us the influence of epidemic constitutions in effecting a greater or less tendency to the production and spread of particular diseases. One predisposing cause to attacks of puerperal fever was, no doubt, the state of the constitution of the patient immediately after delivery. Dr. Collins' cases in the Dublin Hospital showed, not only that the disease was far more apt to attack those who were worn out by long labours than those women who had escaped with parturitions short in their duration, but also that the malady, when it did appear, was much more fatal in the former than in the latter class of patients. The Society was aware that it had been proposed by various pathologists of late years to give various prophylactic medicines to puerperal patients after delivery, and to surgical patients after operations, in order to prevent the attacks of puerperal or surgical fever. All these measures, such as sulphate of quinine, muriate of iron, &c., had the object in view of strengthening the constitution of those to whom they were exhibited, so as to diminish or destroy the predisposition to these feverish attacks. And we could understand their proposed mode of action when we reflected upon the fact that a predisposition to such attacks was given by any unusual degree of exhaustion or debility in the patient. Every patient exposed to the contagion, and even to the inoculation, of small-pox, for example, did not take small-pox. There were other means by which the predisposition to that disease was reduced or removed, than by previous variolation or previous vaccination. And perhaps, particularly, or otherwise, by medicine, we may be able to reduce or remove the predisposition to puerperal fever, as well as to scarlatina, measles, &c. Lastly, Dr. Simpson observed, no doubt, sporadic cases of puerperal fever did, and were from time to time occurring, traceable to no contagion or any other cause capable of being averted; but owing, as in Dr. Moir's first case, to morbid actions going on in the constitution of the patient even before delivery; or to morbific agencies capable, under other circumstances, of producing fever or inflammation acting upon the patient in delivery. Dr. Arneth had particularly called the attention of the Society to the connection which was generally believed by British accoucheurs to exist between erysipelas and puerperal fever; and he had stated that the relation between these two diseases had not been observed in Vienna. Dr. Simpson, however, expressed his opinion, that now that Dr. Arneth's attention had been directed to it, he and his compatriots would find such relations existing between these two diseases, which English accoucheurs spoke of. We, all of us, often overlook such facts in pathology till our attention happens to be prominently called to them. Dr. Simpson had long believed and taught that there was a pathological connection between the two diseases in question, as to their pathological nature, their pathological anatomy, their symptomatology, and their causation. The two diseases had in Britain been repeatedly observed to prevail at the same time, in the same town, in the same hospital, or even in the same wards. There were various accurately recorded instances in our British journals, which he had already alluded to as showing this—that when the fingers of medical men were impregnated with the morbid secretions thrown out in erysipelatous inflammation, the inoculation of these matters into the genital canals of our parturient females produced puerperal fever in them in the same way as the inoculation of the secretions from patients who had died of puerperal fever itself. The effused morbid matters in the one disease, as in the other, were capable of producing the same effect when introduced into the vagina of a puerperal patient. In an instance recorded by Mr. Hutchinson, two surgeons, living at ten miles distance from each other, met half way to make incisions into a limb affected with erysipelas and sloughing. Both practitioners touched and handled the inflamed and sloughing parts; and the first parturient patients that both practitioners attended within thirty or forty hours afterwards, in their own distant but respective localities, were attacked with, and died of, puerperal fever. The late Mr. Ingleby mentions an instance of a practitioner making incisions into structures affected with erysipelas, and going directly from this patient to a patient in labour. This patient took puerperal fever and died. And within the course of the next ten days, seven cases of puerperal fever occurred in the practice of the same practitioner, almost all of them proving fatal. And various other cases, similar to the preceding, were well known to the profession. Again, however, the reverse of this was equally true. Not only was the morbid matter in erysipelas apparently sometimes capable of producing puerperal fever, but the secretions and exhalations from puerperal fever patients seemed, on the other hand, sometimes capable of producing erysipelas. In the series of puerperal cases met with by Mr. Sidey in this city about 1837, and which had already been alluded to, the morbific matter carried from two or three patients seemed, as has been previously stated, to produce the disease, both in Dr. Simpson's own practice, and also in the practice of Dr. Patterson. The morbid effusions of these patients created the same disease of puerperal fever in other patients to whom that matter was carried. But the morbid secretions and exhalations from these same patients appeared to do more—viz. they produced also erysipelas in several of the nurses, relations, and attendants upon the patients. Four or five cases of erysipelas followed upon a single one of these puerperal cases in Mr. Sidey's practice, and that during the week subsequent to the puerperal patient's death. The patient's mother-in-law, who was in constant attendance upon her, was attacked with fever and erysipelas in the face and head. One of the patient's sons, a boy five years of age, was attacked with erysipelas of the face; a daughter was seized with fever and sore throat, with dusky redness, which continued for some time; and the patient's sister-in-law was attacked with acute gastric symptoms, and great abdominal irritation, under which she sunk in a few days. Here we have apparently the same focus of contagion producing puerperal fever in puerperal patients, and erysipelas, inflammatory sore throat, &c., in patients who were not in a puerperal state. Dr. Hill, of Leuchars, had published in the *Monthly Journal* of last year two very important series of cases, showing, in a similar way, the connection between producing puerperal fever and erysipelas, in the identity of the poison that was capable of producing these two diseases. We have already seen that the inoculation of the morbid matters from erysipelatous structures into parturient patients will occasionally produce puerperal fever. But furthermore, the converse of this is so far also true, viz., that the inoculation of morbid matters or secretions from puerperal fever patients into other healthy individuals, will occasionally produce in the latter attacks of erysipelas. A considerable number of instances have been published by Dr. Duncan, Mr. Travers, and others, in which medical men have died from punctures received in dissection, or rather from erysipelatous inflammation of the arm and side following such punctures. The history of a large proportion of these cases shows, further, that the matter thus inoculated, and which produced the fatal erysipelas and fever, was a puerperal fever secretion; as in most instances the disease resulted to these medical men from opening the bodies of patients who had died of puerperal fever. Whilst thus arguing for some pathological connection between erysipelas and puerperal fever, Dr. Simpson further stated that, though, in a few cases, patients labouring under puerperal fever had been attacked with erysipelas of the skin and cellular tissues—and, on the other hand, patients who were delivered when suffering under erysipelas, were sometimes subsequently attacked with puerperal fever—yet these results were not always observed. He alluded to cases where erysipelas had attacked women before delivery, but was not followed by puerperal fever. And he had seen more than one patient labouring under puerperal fever have inflammation of the skin, but that of a pustular type, like ecthyma, and not of an erysipelatous character. In stating this, he wished to express his belief that the diseases were not in all respects pathologically identical, though the morbid secretions in the one were capable of producing, in those predisposed to it, the other disease—erysipelatous effusions producing puerperal fever, and puerperal fever secretions producing erysipelas. Other febrile and inflammatory products, besides those of puerperal fever, when inhaled through the lungs into the blood, or inoculated into the blood through the vagina, may, as already stated, probably produce puerperal fever in addition to those we have principally spoken of, viz., the secretions from puerperal fever and erysipelatous patients. And he thought the whole subject one of extreme importance to have more thoroughly investigated; because, in a case like puerperal fever, it was the means of prevention that we were to look to, and to expect success in, more than the means of cure. It was here, as elsewhere, evident that human life would probably be saved to a far greater extent by studying the means of preventing the causation of disease, than by any study of the means of treatment, after disease was once actually commenced. And when it was remembered that about 3000 women still died in child-birth in England and Wales alone every year, and that a large proportion of these 3000 maternal deaths were deaths from puerperal fever, he thought he need not make any further observations on the importance of studying the means of prevention in such a fatal and formidable disease, nor offer any apology for the length of the imperfect remarks which he had ventured to offer on this important subject.—*Ibid.*

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43. *Contagiousness of Puerperal Fever.*—Dr. Peddie said, that he had given a good deal of attention to the subject of puerperal fever, from the occurrence of some cases in his practice, upwards of five years ago; and he quite agreed with Dr. Arneth in his excellent remarks on the danger of obstetrical manipulation, after being recently engaged in post-mortem examinations. That, he thought, was now a pretty generally admitted opinion in this country. Dr. Robert Lee of London, Dr. Merriman, and others, had, many years since, mentioned cases in proof of this source of danger; and, of late, accoucheurs in this city had exercised much caution. To point out still more strongly the risk of accoucheurs handling morbid preparations, he would notice what he believed to be a fact, that the series of puerperal fever cases which Dr. Simpson had mentioned as occurring in his practice some years since, from assisting at an autopsy of one of Dr. Sidey's puerperal cases, did not end there, but that a practitioner in Leith, having examined, in Dr. Simpson's home, a portion of the uterus obtained on that occasion, had immediately thereafter three fatal cases of the fever in his own practice. With regard to the power of the solution of the chloride of lime as a disinfecting wash for the hands of those engaged in midwifery practice, Dr. Peddie had no doubt; and in that belief he had personally used it much. He said that it might be in the recollection of many of the members of the Society, that the cases of puerperal fever which had occurred to himself, and regarding which he had then read a communication, took place in two series. The first series of these cases occurred in such a way as to take him by surprise, and before the necessity for precaution was suggested. Now, however, he changed

his clothes, and washed often with the solution of the chloride of lime; and afterwards, at intervals of a few days, delivered three patients who made most excellent recoveries. The first patient, however, of the second series was a personal friend of the last patient of the first series, resided close by, was with her during her confinement, continued visiting for some days after the fever had shown itself, in spite of urgent remonstrances, and even assisted in the sick-room arrangements, changing articles of clothing, removing evacuations, &c. Thus, in Dr. Peddie's opinion, she obtained the fatal virus direct from her friend, and anew communicated it to him, who, in turn, unwittingly was the medium of propagation to another patient within the next twenty-four hours. Since then, Dr. Peddie had been much on his guard when engaged in surgical dressings, when attending bad cases of fever, erysipelas, or post-mortem examinations, considering it his duty to wash well thereafter with the solution of the chloride of lime. Whether in consequence of these precautions or no, he had not since met with any such cases in his practice. As to the question of the possibility of puerperal fever being propagated through the medium of clothing, Dr. Peddie mentioned a case, recorded in the "Provincial Journal" (No. 166), as occurring to Dr. Allen of York. The doctor, after seeing the last of a long list of fatal cases, was surprised to find a new instance of the disease, two months afterwards, in the practice of his assistant. It was ascertained, on investigation, that that gentleman had put on the pea-jacket which Dr. A. had last worn when in attendance on a case of the fever. Dr. Peddie was not prepared to assert the correctness of this explanation; but thought that it was better that accoucheurs should not dismiss from their minds the possibility of this fearful malady being communicated by articles of dress.—*Ibid.*

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44. *Causes and Treatment of Secondary Hemorrhage after Parturition.*—A valuable paper on this subject is published, in the *Dublin Quarterly Journal of Medical Science* for May, 1851, by Dr. M'Clintock. It specially relates to those cases in which any profuse sanguineous discharge from the vagina takes place, commencing six hours after a patient has been delivered, and within a month from this epoch.

Causes.—I. *The presence of a portion of placenta in the uterus* is one of the most frequent causes. This is observed to be most generally the result of artificial removal of the after-birth, especially if the operator be incautious or timid, but it may happen in the most skillful hands, when the cause of detention has been morbid adhesion of a very intimate nature. This seldom produces any untoward symptoms until the third or fourth day; but then, if it be not cast off, many may be developed. The author specially speaks of the probability of uterine or crural phlebitis, and of secondary hemorrhage, supervening. This latter seldom comes on until the fourth or fifth day, and it may not do so until the second week, or later; in fact, so long as a fragment of placenta remains in the uterine cavity, the patient can have no security against a reccurrence of the sanguineous discharge, and the period at which it may come away is extremely variable; sometimes not until the third week, or later.

II. *The retention of a coagulum, of any size, in the uterus beyond the first few hours after delivery.* In this case, the immediate or exciting cause of the effusion is probably some accidental displacement of the clot, or excitement of the arterial system. The symptoms very much resemble those produced by the retention of part of the placenta; but there is less of the fetid smell, and no shreds or portions of the placenta are expelled, whilst the coagulum, if entire, has exactly the shape of the uterine cavity.

III. *Relaxation of the uterine fibres.*—This is admitted to be a point, in regard to which it is difficult to obtain direct evidence; but several cases are referred to which favour such a view; and it is observed that, from the numerous and strongly marked sympathies of the uterus, it is reasonable to conclude, that for some days, at all events, after parturition, there may be an interruption of its contractile function, through the influence of deep mental impressions, or certain bodily derangements.

IV. *Local or general disturbance of the vascular system*, whether induced by premature exertion, the incautious use of stimulants, agitation of mind, local determination of blood, or whatever tends to increase the force of the vital current. A knowledge of this cause points out an additional reason for enjoining strict rest, and the horizontal position, when the womb remains unusually large at a late period after delivery.

V. *Great fecal accumulation* in the lower part of the great intestine is mentioned on the authority of Moreau, who mentions cases in which the hemorrhage ceased upon his mechanically removing the excrementitious matter.

VI. *Functional disorder of the liver.*—Dr. Ayre has known this form of uterine hemorrhage to have been produced by functional disorder of the liver, and to have been suppressed by the administration of calomel. At first he ascribed the effect of the medicine, in relieving the hemorrhage, to the evacuation of morbid matters from the bowels; but further, and more accurate observations of the colour and condition of the stools, of the course of the disorder and effects of the remedy, convinced him that such was not the case; and that the effect arises from an alteration of the morbid actions of the liver, and other organs of digestion. The cause is said to be in this case a sudden interruption of the secreting function of the liver, which gives rise to an abdominal venous congestion, in which the uterus may participate; and the indication of cure for the hemorrhage is to restore the biliary secretion. Calomel, he observes, is the medicine which must be mainly relied on; and it must be given in small, but frequently renewed doses, following them up by aperients, or combining them with minute doses of opium, when a diarrhœa is present, and continuing them until some impression is made upon the complaint, even at the risk of slightly affecting the mouth.

VII. *Inflammatory ulceration of the cervix uteri.*—According to Dr. Henry Bennett. The author thinks that the frequency of this, as a cause, has been somewhat exaggerated; for, first, Dr. Bennett observes, that inflammatory ulceration of the cervix is of frequent occurrence during pregnancy, which cannot be said of lochial menorrhagia; and, in the second place, the author remarks, that he has strong reason to believe that many patients, affected with chronic inflammation and ulceration of the os uteri, had been delivered under his care, who nevertheless had no subsequent attack of hemorrhage, or extraordinary amount of lochial discharge. It is suggested, however, that it occasionally happens, especially in first labours, that the os uteri is slightly fissured by the passage of the child, and that this might put on an ulcerous character, and thus give rise to hemorrhage during the puerperal state.

VIII. *Presence of a polypus attached to the uterus*, which may for the first time give evidence of its existence soon after delivery. Various authorities and cases are referred to on this point.

IX. *Inversion of the uterus*, it is said, has been long recognized as a cause of hemorrhage post partum. "I feel strong reasons," says Mr. Crosse, "for believing, as has been repeatedly stated by authors of high reputation and great experience, that partial inversion exists more often than is generally suspected, and is the cause of hemorrhage after the delivery of the afterbirth. The loss so produced ordinarily takes place immediately upon its removal; but it may be repeated, at uncertain intervals, subsequently, if the malposition be not rectified." The hemorrhage may continue for hours, or first show itself after several hours, or even after a day or two.

Besides the causes which are considered to be the ordinary causes of hemorrhage after parturition, the author refers to several cases in which it had occurred from causes of an unusual character; and in most of which its precise origin was only discovered on a post-mortem examination. These are highly interesting, and cannot be read without considerable advantage.

TREATMENT.—The general principles of treatment, in all these cases, are to tranquillize the circulation, both local and general; to promote the condensation of the uterine structure, and to use such constitutional and local remedies as may tend to favour coagulation at the mouths of the vessels.

The first and second indications are to be fulfilled, by enjoining perfect rest in the horizontal position, and withholding stimuli of every kind. The patient must lie on a hard bed, in which her hips cannot sink, and firm pressure, with occasional friction, should be made over the uterus, so as to promote its contraction, and expel any coagulum that might have formed within it. At the same time, the ergot of rye should be administered with as little delay as possible, since, in these cases, our chief reliance for the suppression of the discharge is on this remedy. Fifteen or twenty grains of the fresh powder may be given in the first instance, and repeated, if necessary, in forty minutes or an hour. When the discharge is not very profuse, five or six grain doses may be given every three or four hours; but in every case, the first dose should be a full one. If the patient be alarmingly reduced by hemorrhage, caution is necessary respecting it; as it is observed that the ergot exercises a decidedly sedative influence upon the system. Cold applications should not be applied on slight grounds for the first day or two after labour, for fear of inducing uterine inflammation; but otherwise there is no objection to them. A cold enema, with a spoonful of common marine salt, is recommended; as is also a moderate dose of the sedative solution of opium.

Should these means fail, recourse must be had to the tampon or plug. We must not forget the possibility of internal hemorrhage occurring during its use; which is to be guarded against by securing a pad over the uterus with a well applied binder, and occasionally examining the hypogastrium. The author adds, that a silk pocket handkerchief forms about the best material for a plug that can be used.

When the hemorrhage manifests a disposition to recur, recourse must be had to constitutional means for its suppression; and the state of the liver and bowels must be looked to. Acetate of lead receives a very qualified recommendation. Sulphate of zinc, in doses of one or two grains, with a quarter or half a grain of opium, may be tried, as also the dilute sulphuric and gallic acid; the latter, in one case, acted very promptly and effectually in suppressing the bleeding. The tincture of Indian hemp, and oxide of silver, are also spoken of in favourable terms.

If the hemorrhage is of an atonic or passive character, tonic and chalybeate medicines are recommended; and a very admirable combination of them, it is said, is the sulphate of iron, sulphate of quina, dilute sulphuric acid, and water; to which, if required, a little Epsom salts may be added. A strong infusion of bark and elixir of vitriol, with a small quantity of tincture of cinnamon, was recommended by Dr. Leake. In extreme cases of uterine hemorrhage, full doses of oil of turpentine, sometimes as much as an ounce, with half that quantity of almond oil, for a dose, was found of much benefit by Mr. Griffith of Wrexham.

When there is ground for suspecting that the hemorrhage results from the retention of a portion of placenta, or clot, a vaginal examination should at once be made, as speedy removal of the foreign body is desirable; but great caution is necessary in removing a portion of placenta when it is adherent, or when this proceeding would be attended with much difficulty.

When ulcerative disease of the cervix is the probable cause of hemorrhage, the treatment does not essentially differ from that of ordinary cases of inflammatory ulceration of the cervix uteri. Common prudence will suggest the advisability of postponing topical applications to the os uteri, until the system has recovered from the effects of parturition. If a fortnight, or three weeks, can be allowed to pass over, so much the better; then we may begin to touch the surface of the ulcer with the nitrate of silver, or some other caustic. A mild injection may be thrown into the vagina. Early and active counter-irritation should also be made over the sacrum. Constitutional treatment must in every case be employed, and the system restored as speedily as possible to its most normal state.

In hemorrhage depending upon a polypus, much circumspection is necessary in deciding upon its removal, as many unpleasant consequences have attended the operation under these circumstances, on account of the increased size and vascularity of the uterus, and the tendency still existing to inflammation and phlebitis. Hence, it is recommended to forego all attempts to extirpate the tumour as long as possible, or until the woman has recovered from the effects of parturition. These cases, however, require very different treatment according to their different circumstances. Many cases are referred to in illustration.—*Lond. Journ. Med.*, June, 1851.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

45. *Poisoning with Oxalic Acid.*—Communicated by Dr. Didama to T. R. Beck, M. D. Prof. T. R. Beck—Dear Sir:—The following case of poisoning which occurred in Syracuse on the 16th inst., may not be uninteresting to you. An Irish woman, aged thirty, of full habit and good constitution, feeling slightly ill in the morning, went without her breakfast, and about dinner time dissolved two large tablespoonfuls of what she supposed to be Epsom salts, in a small quantity of water. She did not notice that the taste of the mixture was unusual till she had swallowed at least two-thirds of it, when she immediately alarmed her companion, by exclaiming, "It's not salts at all that I've taken, and I'm kilt intirely." Dr. H. Hoyt, of Syracuse, was sent for in haste, and he found on his arrival—some twenty minutes after the accident—that the patient had vomited twice; at first only the solution she had taken, and subsequently a dark-coloured, bloody-looking fluid, in which were numerous white membranous patches. The Dr. promptly gave an emetic of ipecac., which produced copious vomiting of grumous matter, similar to that previously discharged. Although pretty well satisfied of the nature of the poison, he hastened with a sample to the office of Mr. Fuller, a practical chemist, and found, on applying the proper tests, that the supposed salts were oxalic acid. Returning to the patient immediately, he gave her about half an ounce of prepared chalk, and sent for me to come with my stomach-pump.

I arrived about an hour and a half after the poison had been taken, and found the woman quiet, and nearly free from the intense burning pain in her throat and stomach which she had felt previous to my arrival; with an anxious countenance; pulse 92, and feeble; tongue and fauces very red.

After two efforts, unsuccessful on account of the irritability of the œsophagus, I introduced the stomach tube, but the constant retching and extreme distress occasioned by its presence, obliged me to withdraw it, and to cease further attempts for its introduction. A dark, bloody, ropy matter, containing a great many white flakes and shreds, was immediately vomited.

Small quantities of flaxseed tea were ordered to be given occasionally, with a dose of olive oil in the evening. During the night she experienced slight pain in her stomach, with much thirst, and in the morning discharged from her bowels a large amount of matter resembling what she had vomited.

I visited her again yesterday, and found her at work in the kitchen. She has taken no nourishment, except rice water, since the accident, and feels rather weak, but is comfortable in other respects. Is it not strange that so large a quantity of the acid, *taken fasting*, should not have produced more violent symptoms, and even death? Of course she owes her recovery to her speedy vomiting, and to the administration of the emetic, although the chalk may have neutralized some remaining portion of the acid.

Salina, N. Y., *August* 9, 1837.

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46. *Note on the Poisonous Properties of the Milky Humour secreted by the Cutaneous Pustules of the Land Lizard and the Common Toad.* By MM. Gratiolet and Cloez.—It is an ancient and still common opinion that the land salamander or lizard (*Lacerta Salamandra*, Linn.) possesses a subtle venom, but at present this is deemed fabulous by the scientific, and the fluid secreted is only allowed to be acrid.

An accidental occurrence, some years since, caused doubts as to the correctness of this last. Several frogs placed in a cask with salamanders were at the end of eight days found dead. And having recently received a number of these last animals in a very healthy condition, we deemed the subject worthy of further experiments.

The liquor obtained from the cutaneous pustules is of a beautiful white colour, with a powerful odour. It flows freely when taken, but coagulates. Indeed, alcohol coagulates it instantly.

A small quantity inserted under the skin of the thigh of a small bird showed no marks of causticity, as is usually ascribed to it. But in two or three minutes, the feathers bristled up, the bird staggered, its beak opened, and it made a convulsive noise. Soon it turned its head back, uttered plaintive cries, turned several times on itself, and died.

A yellow-hammer, wounded on the wing, died in less than three minutes; a chaffinch, similarly wounded, in twenty-five minutes, after two epileptic fits. Many other small birds died in about six minutes, and it was observed that life was prolonged when there had been a free discharge of blood from the small incision.

We experimented on a large bird—the turtle dove, but it died in twenty minutes, after terrible convulsions with alternate paralysis. *All the birds experimented upon had epileptic convulsions.*

When the poison was inserted under the skin of the thigh of a mouse and of a Guinea pig, these animals respectively manifested, at the end of six minutes, great suffering. The breathing was quick and painful; they slept, but the sleep was constantly interrupted by slight convulsions resembling the effects of an electric shock. Still, with all these animals the symptoms vanished in a few hours, and they recovered perfectly.

The Toad.—The milky fluid contained in the dorsal and parotid pustules of this animal is thick and viscous, of a yellowish colour, an unpleasant odour, and a nauseous bitterness, quite insupportable. Greenfinches and chaffinches, inoculated with it, died at the end of five or six minutes, with similar symptoms as in the previous case, *but without convulsions.* Even when dried, the fluid destroyed birds.

So far as anatomical examinations could be made, it was ascertained that all laboured under marked apoplexy.

It would thus seem that the common, vulgar opinion as to the venom of the toad is far from being fabulous.—*Comptes Rendus*, April 21, 1851. T. R. B.

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47. *On the Diminution in Weight of New-Born Infants.* By Dr. Hoffman.—It is a popular opinion that new-born children fall away during the early days after birth; and, seeing that, during that period, they evacuate meconium, the epidermis exfoliates, and matters are expired from the lungs, while the little milk they take is little else than a purgative colostrum, there is reason for its entertainment. Dr. Hoffman had thirty-six children who were successively born at the hospital at Wurzburg, weighed every morning, and in the present article, he gives the tabulated report of the daily examination; from which the general conclusion is drawn, that all children for the first thirty-six or forty-eight hours after birth become lighter, such diminution in the majority continuing until the third day. From this period, they increased again, so that by the fifth or sixth day, they have in general recovered the weight they possessed at birth.—*British and Foreign Medico-Chirurgical Review*, No. 13, Jan. 1851, from a *German Journal.* T. R. B.

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48. *On some Points in Medical Jurisprudence, deduced from a Series of Post-mortem Examinations for Judicial Purposes.* By Dr. Casper.—(*Casper's Wöchenschrift.*)

1. *Wounds inflicted during life.*—These are usually stated to be distinguishable from wounds inflicted after death by the suggillation which is met with round their edges. In those wounds, however, which are inflicted by shooting, or puncturing one of the large internal vessels, in which death takes place suddenly, without even agony, this sign will be wanting.

2. *External signs of violence absent.*—It is customary, where no external signs of violence are exhibited by (on) bodies found dead, to infer that violence has not been done, and burial is ordered accordingly. Over how many murders has mother earth in this way spread her mantle! In many cases, rupture of the ribs, livers, spleen, heart, &c., have caused death, and exhibited no outward signs of the fatal injury. (True, and worthy of frequent repetition, but not new. T. R. B.)

3. *Death from loss of blood* is usually characterized by the anæmic aspect of the body. It has been stated, as a rule, that the veins of the membranes of the brain do not partake of this character of bloodlessness. In many cases of

rupture, or wounds of the large vessels, these veins have been found completely empty.

4. *The tongue, in death by drowning,* is said to be always protruded beyond the teeth. Dr. Casper does not deny that this is very often the case, but refers to the details of several instances in which it was found behind the teeth, and to others also of death from different causes, *e. g.* wound of the heart, poisoning by sulphuric acid, in which it was found protruded.

5. *The uterus putrefies last of all the soft structures, except the lungs.*—This is often seen in the dissecting rooms, and more especially so in the bodies of the dead by drowning. Owing to this circumstance, the presence or absence of pregnancy can be determined with certainty.

6. *The mark of the umbilical cord on the neck* is not difficult to distinguish, in new-born children, in cases of intentional strangulation, though of considerable importance in a forensic point of view. There will be found, in such cases, a furrowed, roundish, volatile mark, the width of the cord, certain parts of the neck being slightly suggillated, usually doubly, in many cases trebly. This mark also presents parchment-like spots in different parts of its course; seldom any ecchymosis of importance, and never to the depth of the constriction. The fat of the folds of the skin may in winter assume a parchment-like hardness, which might be mistaken for strangulation, but the absence of the signs, besides the depression, is sufficient to prevent error on this account.—*London Medical Gazette*, Jan. 17, 1851. T. R. B.

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49. *Sale of Arsenic, Regulation Act.*—The principal provisions of this act, which was introduced by the Earl of Carlisle, and has recently passed, are as follows: The seller of any quantity of arsenic must enter in a book, kept for the purpose, the name and residence of the purchaser, and the purpose for which he alleged he wanted the article; the purchaser must also, in all cases, sign his name, and, except in certain cases, the arsenic should not be sold except in presence of a witness. With the view of preventing accidental poisoning, it has been proposed to add some foreign colouring matter to the arsenic, so that it may not be mistaken for flour, meal, carbonate of soda, or the like. But as the introduction of foreign matters might interfere with some of the purposes to which arsenic is applied in arts and manufactures, it is determined that no person shall sell less than ten pounds weight of uncoloured arsenic; unless it were stated by the purchaser that he wanted it for some purpose in which the introduction of an adventitious colour would be injurious. It is proposed that soot be employed as the colouring matter. *Arsenic is to be sold to none but male adults*, and where less than ten pounds of uncoloured arsenic is required, there must not only be the signature of the purchaser, but also the presence of a witness known to the seller.—*London Journal of Medicine*, April 1851. T. R. B.

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50. *Poisoning.*—A return has been printed, by order of the House of Commons, of the number of persons, male and female, tried in the United Kingdom, for murder and attempts to murder, by the administration of poison, from the year 1839 to the year 1849 inclusive. The number of persons so tried in England and Wales, during the ten years, was 154; namely, 69 males and 85 females; the number of convictions on either charge was 66. In Scotland, the number of trials for murder by poison since 1830, have been only nine, 2 males and 7 females; the convictions were 3. The trials for attempts to murder were 6, 3 males and 3 females. Total trials in Scotland 15; total convictions 7. In Ireland, the trials amounted to 56; 25 males and 31 females, and the convictions were 13. In 1839, there occurred only one conviction in Ireland for murder by poisoning. In 1841, there were 5 convictions found against 10 persons accused. In 1849, the number of indictments was 13; 7 males and 6 females, and the convictions 3.—*Monthly Journal of Medical Science*, December 1850. T. R. B.

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51. *Poisoning by Strychnine. Tannin proposed as an Antidote.*—A female aged 40, of a feeble constitution, and suffering under rheumatic neuralgia, was advised, in conjunction with other remedies, to use the nitrate of strychnine.

The dose prescribed was one twenty-fifth of a grain, with white sugar, every three hours. The invalid hastened to cure herself, and, without advice, doubled the dose and took it every hour. Vertigo occurred on taking the first. At the end of six hours, she had taken half a grain. The vertigo now became more intense, and she soon fell into a state resembling opisthotonos, with a feeble and frequent pulse. The spasms, however, gradually subsided, but the vertigo remained, with nausea, occasional vomiting, and difficult respiration. In this condition, cold water was frequently applied to the head, and tannin, to which citric acid and bicarbonate of soda were added on account of vomiting, was given in solution. The vomiting was soon allayed, and then the tannin alone was given in simple syrup. In twenty-four hours, all the severe symptoms were removed.

The tannin, of which the dose had been sixteen centigrammes, was now replaced by a less powerful astringent.

In giving the particulars of this case, it is conceded that the use of tannin was empirical, and the success is not ascribed to it solely.—*Journal de Médecine et de Chirurgie Pratique,* June 1851. T. R. B.

52. *Case of Poisoning by Scheele's Green* (*on Paper Hangings*). By THOMAS STEWART TRAILL, M. D., Professor of Medical Jurisprudence in the University of Edinburgh, May 31, 1851.—A child, aged three years, had obtained some slips of paper coloured with this material (Scheele's Green, or arsenite of copper), and had chewed some of it. He returned home, complaining of severe pain over his abdomen, and vomited repeatedly. His mother observed some shreds of this paper in his hands, and some of the green matter on his lips and cheeks. The vomiting returned at intervals with much severity, the pain was violent, and Dr. Traill was sent for; but, being from home, did not see the patient until three hours after he had been taken ill. Meantime, his pulse had become feeble, his extremities cold, and face livid. On seeing the patient, the vomiting was found somewhat abated and the skin recovering its heat, but the pain in the bowels was still acute. On learning the symptoms, Dr. Traill inquired whether the child had swallowed anything unusual, and was informed of the facts just stated.

He immediately prescribed the only remedies at hand—magnesia in milk, with the whites of two eggs diffused in water—until he could procure the hydrated peroxide of iron. But the symptoms were so much relieved before this could be obtained, that he deemed its use unnecessary, and next morning the boy was quite convalescent.

On the third day, the child passed by stool one or two fragments of the paper, on which some of the green colour was still visible, and for a few days more he did not eat his food with his usual relish, but no other bad consequence has followed.

Dr. Traill preserved the shreds of paper which the child had carried home, scraped off a portion of the green colour, mixed it with a little soda flux, and subjected it to heat in a tube; when he obtained a distinct metallic crust, with a crystalline inner surface, an alliaceous smell, and resolvable by heat and air into white crystals, with triangular facets, proving the colouring matter to contain arsenic, of which the quantity appears much more considerable than he expected. On comparing the pigment on the paper with Syme's Hernerian Colours, it answers to *pale emerald green.*

It seems improper to employ so dangerous a material as arsenite of copper, in such large quantity, on articles like paper hangings, which may often come in the way of children, or other persons little aware of the deleterious properties of this colouring matter.—Monthly Journal of Medical Science, July 1851. T. R. B.

53. *On the Presence of Mineral Poisons in the Nervous System, as a Sequence of Acute Poisoning.* By M. ROUCHER.—This subject does not appear, as yet, to have been a matter of especial attention. Dr. Flandin, in his "Treatise on Poisons," decided it in the negative. Still there have been cases related of late, in which, as a result of poisoning more or less rapid, arsenic and lead have been found in the encephalon by several experimenters; copper has been de-

tected, in a solitary instance, in the spinal cord; and again, according to M. Millon, antimony accumulates in the brain in those fatal cases where the nervous symptoms indicate the principal seat of the poisonous action.

The author places but little reliance on previous facts, as they have not been sufficiently generalized. He performed a full series of experiments on dogs, with arsenic, lead, copper, and mercury.

In two made with arsenic, that substance was found in each case in appreciable quantities in the brain.

Mercury was also constantly found in three cases of poisoning with corrosive sublimate.

Copper was detected in five cases out of six, when sulphate of copper had been employed in various doses.' The proportion of oxide of copper, estimated in three instances, varied from three to ten *dix-milliѐmes*. When no poison had been taken, the brain of dogs did not manifest an appreciable quantity of copper.

Lead was obtained in the proportion of eight *dix-milliѐmes* of the metal from the brain of a dog, who had been dead three days, and to whom three grammes of the acetate of lead (with the œsophagus tied) had been administered. The proportion is evidently extraordinary.

These results render it probable that similar ones may be obtained with other mineral poisons, and they seem to justify the opinion that poisons generally may exercise a special action on the nervous centres.—*Comptes Rendus*, April 28, 1851. T. R. B.

54. *Homeria Collina.*—I introduce this plant (which is known to almost every child in the colony as the Cape Tulip), not for its therapeutical uses, but for its obnoxiousness. The poisonous qualities of its bulbs appear to have been known to some extent years ago; but judging from the rapidity with which death ensued in a recent case, when they had been eaten by mistake, it must be of a very poisonous kind. To Dr. Laing, Police Surgeon of Cape Town, I am indebted for the particulars of a most melancholy case of poisoning, caused by this bulb.

A Malay woman, somewhat advanced in years, with her three grand-children, respectively of the ages of twelve, eight, and six, partook, on the 18th of September, 1850, of a supper consisting of coffee, fish, rice, and ate along with this a small basin full of the bulbs of the *Homeria Collina.* The exact quantity which each ate is not well known. They appear to have supped between seven and eight, and retired to bed at nine o'clock, apparently in good health.

About one in the morning, the old woman awoke with severe nausea, followed by vomiting, and found the children similarly affected. She endeavoured to call for assistance, but found herself too weak to leave her bed, and when at five o'clock assistance arrived, the eldest girl was found moribund, and expired almost immediately. The little boy of eight years died an hour afterwards, and the youngest child was found in a state of collapse, almost insensible, with cold extremities, pulse scarcely fifty and irregular, pupils much dilated. The symptoms of the grandmother were nearly similar, but in a less degree, accompanied by constant efforts at vomiting. By using diffusible stimulants, she and this child eventually recovered.

The body of the oldest child was examined twelve hours after death. Marks of intense gastritis were found, particularly about the cardiac and pyloric orifices. The inflammation extended throughout the whole course of the small intestines, and there was great venous congestion in the brain.

It is remarkable that, in cases of poisoning from *fungi*, violent diarrhœa is present with vomiting; whereas, in the present case, obstinate constipation prevailed. Most probably, all plants belonging to this genus partake of the poisonous property, which, in the case mentioned above, was not dissipated by boiling. Floræ Capensis Medicæ Prodromus. By L. Pappe, M. D.—*Pharmaceutical Journal,* July 1851. T. R. B.

55. *Nicotine.*—Great interest was excited at the Academy of Medicine of Paris, on the 4th of June, 1851. A case of poisoning by nicotine, occurring

in Belgium, was attracting the public attention everywhere. M. Orfila, with the zeal and ardour so characteristic of him, commenced a new series of investigations on a subject to which he had previously applied himself in 1840; and on the 20th May, he deposited with the Academy a memoir containing the results of his recent labours. But the position of the accused criminals (Bocarmé) required great reserve, since they were on their trial. M. Orfila delayed the publication, and hastened to Mons, in order to communicate with the distinguished chemist of Brussels (M. Stas), to whom had been committed the chemical examination on the trial. The moment has now arrived when he is justified in breaking silence. The administration of nicotine is confessed and proved, and the only points remaining for the jury to consider are the circumstances attendant on its exhibition.

The members of the Academy received the communication with deep interest and attention.

M. Orfila proposed to demonstrate—

1. That pure nicotine possesses characters as peculiar and marked as those which belong to mineral poisons.
2. That it is possible to detect its presence in the digestive canal, the liver, the lungs, and all the principal viscera, when it has been absorbed.

[Thus far, we quote from an editorial article. The following is taken from a reported sketch of M. Orfila's paper, in the same Journal:—]

In depositing with the Academy his memoir on the 20th May, he was unwilling to have it read, lest it might exert some influence on the case which was to be tried at Mons, eight days thereafter. This difficulty is now, however, completely obviated. I have attended the three first sittings of the Court of Assizes of Hainault, and have heard the questions put to the accused, and the testimony of several witnesses. It will not aggravate the condition of the accused, even if my memoir be published. M. De Bocarmé confessed that he had prepared the nicotine—that his brother had taken a notable dose of it, and from which he died suddenly. Again, it was not to be doubted that M. Stas had detected the poison in the body.

After describing the physical and chemical properties of nicotine, several of which had not been previously noticed, M. Orfila stated the experiments made by him in 1840, and now very recently, to determine its actions on the animal economy. It resulted from all these, that this alkali, when anhydrous, is extraordinarily active, as one or two drops are sufficient to induce the most grave intoxication, and indeed death in dogs to which it is given. One drop applied to the eye of a dog poisoned it so promptly and severely that it died in two or three minutes. When the poison was applied, the animals ran round the place where they were for a few seconds and seemed vertiginous, but they soon fell on the right side, and were seized with convulsions, at first light, but presently severe and tetanic. Death ensued in one, two, or three minutes, if the alkali was anhydrous, and in several minutes if it had retained a certain proportion of water.

On examination, the tissues to which the nicotine had been applied were found inflamed and altered, as they are from taking ammonia.

As to chemical results, M. Orfila announced that he had detected the poison in the liquids of the stomach, in that viscus, in the liver, spleen, kidneys, lungs, and indeed in the blood. To accomplish this, he has followed two processes.

First Process.—Macerate the suspected matter for some hours, in from 150 to 200 grammes of distilled water, acidified by three, four, or six drops of concentrated sulphuric acid. A soluble sulphate of nicotine is thus formed. Filter and evaporate by high heat, until the fluid is reduced to one-third, or one-fourth of its previous volume, and then again filter, in order to get rid of a notable quantity of organic matter, which is deposited during the evaporation. The liquor thus filtered is acid, but is rendered alkaline by pure caustic soda, and the sulphate of nicotine becomes sulphate of soda and nicotine. These are separated as follows: 1. Distil the liquor in a retort; condense the nicotine in a receiver plunged in cold water. The liquid thus collected is alkaline, and consists of water and nicotine. Add a very small proportion of ammonia, to prevent the decomposition of the organic matter, which still adheres to the disstilled fluid. It is then only necessary, in order to obtain the nicotine perfectly pure, to evaporate by heat the nicotinized water; the ammonia and the water pass off, and the nicotine remains. 2. Or, pour sulphuric ether on the liquor rendered alkaline by soda. The ether dissolves the nicotine, without any effect on the sulphate of soda, and without sensibly dissolving the organic matter. Let the ethereal solutions be decanted off, and the ether allowed to evaporate spontaneously. Nicotine remains. This process is preferable to the previous one, in which heat is employed.

Second Process.—Macerate the suspected matter for some hours in sulphuric ether, which dissolves the free nicotine, and also that which has been changed to soap through the fatty matters contained in the organs. This saponification appears to be a constant occurrence. The fluid thus obtained is decanted, and allowed to evaporate spontaneously. A fatty product is obtained, which is to be frequently treated with caustic soda. The soap is thus decomposed, and the nicotine left free. This can be further purified by heat, as above directed, or, what is still better, treating it anew by ether.

M. Orfila gives the preference to the process in which the nicotine is saturated with sulphuric acid extremely diluted.

In the course of his memoir, the author did full and ample justice to M. Stas, Professor of Chemistry at Brussels. This gentleman had been charged by the government with the chemical examination of the body of Gustave Fouguies. He had detected (according to M. Orfila) nicotine in the tongue, the stomach, the liquids contained in the stomach, the liver, and the lungs. He had also discovered it in the boards of the floor of the dining room, although they had been washed with hot water, oil, and soap. M. Stas had experimented in a manner similar to that recommended by Orfila in his first process, except that he had used oxalic acid, instead of diluted sulphuric, and also had employed alcohol to get rid of organic matters.—*Gazette des Hopitaux; La Lancette Française*, June 5, 1851.

A brief sketch of the circumstances attendant on the above case may be here added for the information possibly of some of the readers of the Journal.

The Comte Bocarmé, although of noble birth, is represented to have been an insolent and cruel man, detested by the rural population where he resided. He married, in 1843, the only daughter of a merchant, who had an only brother of weak constitution—so weak, indeed, that from disease it had been necessary some years previous to amputate the right leg. It is well established that Bocarmé expected sooner or later to fall share to his wealth; and this was the more necessary, being profligate and reckless in his expenses, and having wasted the inheritance of his wife. Suddenly it was understood that Gustavus, his brother-in-law, was to be married, and that very shortly.

But all this was ended by the news of the death of Gustavus, at the Château of Bitremont, where the Count and Countess resided, and whither he had gone to dine with them. It was announced, and the lady to whom he was affianced was so informed by a messenger from the countess, that the sudden death was caused by apoplexy.

The appearances on the body, however, contradicted such an idea. There was distinct contusion on the front part of the neck; there were several marks of scratches on the left cheek; and on the left jaw was a corrosion affecting the epidermis, and evidently produced by a caustic liquid. And with all this, the tongue, the mouth, the throat, and the stomach, each bore sensible marks of the passage of such a substance.

The medical examiners were of opinion that a corrosive fluid had been forced into the mouth of Gustavus, and that the external injuries indicated the use of violence, and also the spilling of a portion of the liquid, which fell on the left jaw. Count Bocarmé also bore marks of bites on his left hand, and scratches on his fingers.

Chemical analysis proved that nicotine had been employed, and it was shown that the count had, for at least ten months previous, been engaged in preparing this substance. In Feb. 1850, he had applied to M. Loppens, Professor of Chemistry, in the Industrial School of Ghent, for information how to extract by chemical processes the essential oils of vegetables, mentioning, by way of explanation of his curiosity, that he had, during his travels, observed American savages render their arrows poisonous with the juices of certain plants. He consulted Prof. Loppens particularly as to the manner of obtaining the essential oil of tobacco by distillation, and ordered an apparatus of copper for this purpose.

Some time after, he showed to Loppens a specimen of supposed nicotine, which was declared not to be that substance. He recommenced operations in the laboratory of the professor, and under his directions, and succeeded in obtaining two drops of pure nicotine. A second attempt at home was again unsuccessful. Loppens again renewed his instructions, and the criminal, on a third visit, informed the professor of his final success and of the most destructive effect of the substance on animals.

He did not stop with this, but purchased a more extensive apparatus at Brussels, and at last, after an uninterrupted labour of two days and two nights, succeeded in obtaining two phials full of nicotine. When he had accomplished this, he secreted the apparatus so effectually, that it was six weeks after the murder, and after a diligent search, that it was finally discovered.

This last, certainly, is not in accordance with the manner in which scientific researches are usually made. It was also proved that he gave himself a fictitious name to Loppens and other chemists, calling himself Borant.

It was also shown that the coachman had been sent on a frivolous errand to some distance from home; that the servant in waiting was ordered to leave the room, after a certain time; that a person was heard to fall suddenly on the floor, making piteous cries, and that these in a short time ceased.

It would certainly seem impossible but that the countess (the sister) was aiding and abetting in the poisoning, particularly as it required to be poured into the mouth to produce the effect. She, however, was acquitted, and the count condemned and executed.—*Gazette des Tribunaux*, May 28, 1851.

T. R. B.

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56. *On the Changes which Calomel undergoes in the Intestinal Canal.* By Dr. GEORGE V. OETTINGER.—The author has published his researches in a thesis at Dorpat, and his experiments have led to the following conclusions: They establish, in the first place, the truth of Mialhe's statements, that calomel, when boiled with concentrated solutions of common salt, or of sal ammoniac, undergoes conversion, but only in a small proportion, into bichloride of mercury; red precipitate, on the contrary, forms a soluble oxychloride very readily with sal ammoniac, and sparingly with common salt, and also with the gastric juice. Metallic mercury and Hahnemann's oxide (an ammonio-subnitrate) undergo an almost unappreciable change with sal ammoniac, and only at a boiling heat; white precipitate undergoes the change with sal ammoniac at ordinary temperatures.

On the other hand, however, he found that the alkaline chlorides in the gastric juice were in much too minute quantity and too diluted to exert any obvious action on calomel, and that the gastric juice, even when it contained a much larger proportion of chloride of sodium than usual, remained without action on calomel and metallic mercury. Mialhe's experiments thus lose all value, in reference to the explanation of the *modus operandi* of calomel.

Lastly, Dr. Oettinger found that, after large doses of calomel, there were found in the stomach, and both the larger and smaller intestines, along with traces of inflammation of the mucous coat, always blackish grains and masses of sulphuret of mercury, and an increased proportion of biliary matter. The last is the cause of the green colour of calomel stools, and not the sulphuret of mercury, which can readily be distinguished from the green matter beside it. The increased secretion of bile shows itself also by the distension of gall-bladder.—*Quoted from a German Medical Journal*, in the *Monthly Journal of Medical Science for January*, 1851, *conducted by Drs. Christison, McClagan, Simpson, Robertson, and J. H. Bennet, and Messrs. Syme and Goodsir.* The editors subjoin the following:—

(We never had belief in M. Mialhe's hypothesis, which accounted for the passage of the insoluble calomel into the system by its being converted into the soluble bichloride by the action of the alkaline chlorides in the gastric secretion. What we disbelieved on theoretical grounds, appears to be amply refuted experimentally by Dr. Oettinger.)

I made the following statement on this point, of course previous to the publication of the above (see "Medical Jurisprudence," ii. 587): "Mialhe, some years since, asserted that calomel could be converted into corrosive sublimate, by exhibiting some of the latter with one or other of the alkaline chlorides. This, again, has been denied by Lepage and D'Ollegrio, and at all events is still very doubtful. But, in his last edition, Orfila mentions the following: To an individual labouring under gastro-encephalitis, calomel in powder was given to the amount of eight or ten grains daily. He passed, by stool, a notable quantity of the black sulphuret of mercury, produced, doubtless, by the disengagement of sulphuretted hydrogen." T. R. B.

57. *On Bromine as a Toxicological Agent.* By Henry Wurtz, assistant in Yale College Laboratory.—Mr. Wurtz has not found, in the various toxicological writings, any suggestion as to the use of bromine for destroying the organic matter of stomachs.

An experiment with it was made upon a human stomach sent to the laboratory for examination. "The entire stomach with its contents, in the same state in which it was sent, was introduced into a porcelain dish covered with water, and about an ounce of bromine poured in. A gentle heat was now applied, much below the boiling point of water, and the stomach was turned over from time to time with a glass rod."

"When the stomach had entirely disappeared, which took place in less than half an hour, some hydrochloric acid was added, and the heat continued for a few minutes longer. The liquid was now ready for filtration, and left upon the filter only a few flakes of organic matter, together with a little fat, and that portion of the contents of the stomach which was insoluble in hydrochloric acid. It may be here noticed that a piece of paper which had been improperly wrapped around the stomach by those who sent it, and which could not be separated from it, also a cotton string, which had been tied around it by the same parties, were also completely destroyed by the bromine."

Mr. Kurtz observes that "especial care should be taken that this operation (the evaporation of the bromine) be performed in a strong draught, because the action of the bromine vapours upon the lungs and eyes is injurious beyond the ordinary belief. In case of accidental injury from this cause, the best antidote is inhalation of chloroform or ether."—*Silliman's Journal*, New Series, vol. xi. p. 405.

There is a case of poisoning by bromine in a late number of the "New York Journal of Medicine," which should be read in connection with the above. The article is so much used in the art of daguerreotyping, that physicians should inform themselves, so as to be prepared in case of accidents. T. R. B.

MISCELLANEOUS.

58. *On the Action of Water upon Lead.* By J. Birkbeck Nevins, M. D.—The effect of water upon lead has lately excited so much attention in reference to sanitary questions, and the suitableness of this metal for water pipes and cisterns, that whatever adds to our experience upon the subject is not without value.

Up to a very recent period, our knowledge has amounted, practically speaking, to the following:—

Lead pipes have been used for years, in many towns and in private houses innumerable for conveying spring water for internal consumption, and rain water for external purposes, without producing any injurious consequences; but occasionally accidents have happened which have called attention to what have then been considered exceptional cases, and the general impression amongst chemists and the public has been, that *hard* waters did not act injuriously upon lead, whilst distilled water invariably, and soft waters generally, acted upon it in a dangerous degree.

In making this statement, chemists have, however, been aware that it was not the distilled water which acted upon the lead, but the oxygen of the air which happened to be dissolved into the water; in proof of which, lead has been kept for years in vessels filled with freshly boiled distilled water, and then hermetically sealed, without undergoing the slightest change.

The oxygen of the air combines with the lead, forming oxide of lead, which is separated from the surface of the metal by the slightest disturbance in the water, and leaves a fresh surface to be acted upon by further oxygen. The oxide thus formed combines partially with carbonic acid, also derived from the air, and forms carbonate of lead; and the white deposit, in the case of distilled water, is a variable mixture of oxide and carbonate of lead, in which, however, the proportion of carbonate is much smaller than that of oxide. In some experiments, which I made several years since, I found it to be 8.02 grains of carbonate, and 71.97 grains of oxide, or very nearly one part of carbonate to nine of oxide.

In proportion as water approaches distilled water in softness (purity?), it has generally been found to act upon lead. In the case, however, of *hard* water, the action has been different. *With comparatively few exceptions*, water owes its hardness to the presence of sulphate of lime in small quantities, and when this is dissolved in the water, oxide of lead is formed from the air as before, but, instead of being converted into carbonate, it is changed into sulphate by the sulphuric acid of the sulphate of lime, which adheres so firmly and uniformly to the surface of the lead as to form a protecting layer or varnish, which prevents the access of fresh oxygen. Nothing which has recently been discovered throws any discredit upon the experience of chemists thus far: but the general inference sometimes drawn from this, "that *hard* water protects lead, whilst soft water does not," is now disputed.

It is said that if all waters were hard from the presence of a *small* quantity of sulphate of lime, it might perhaps be true; but some are hard from the presence of soluble carbonate of lime or magnesia, and though a sulphate may protect the lead, a carbonate does not.

The late Prof. Daniell was consulted several (about six) years since, on this subject, and he found, from experiments published at the time, that soluble carbonate of lime did *not* protect lead, but, on the contrary, acted upon it with rapidity. About the same time, also, some cases of accidental poisoning arose from the employment of leaden cisterns for pickling tubs, in which the pickling brine was found to be strongly impregnated with chloride of lead, which, being a partially soluble compound, did not adhere to the lead and form a protecting layer.

So far, then, our knowledge appeared to extend until the attention lately bestowed upon sanitary questions brought up this subject, amongst others, for examination. It was known that distilled water acted rapidly upon lead, causing a rapid promotion of a mixed oxide and carbonate. It was known that, in innumerable cases, an average quantity of sulphate of lime in common hard water did protect the lead, and it was inferred, therefore, that the presence of a soluble sulphate would be a sufficient protection in any case. It was known, but not so generally, that a soluble carbonate of lime or magnesia did not protect lead; but this was practically looked upon as an unimportant exception to the safety which hardness confers.

It was known that chloride of sodium in solution acted upon lead; but the fact was little dwelt upon.

It has, however, lately been stated—

1st. That *hard* water does not protect lead so well as *soft* water.

2d. That, if even moderately hard water protects lead, very hard water, on the contrary, acts rapidly upon it.

3d. That magnesian salts are peculiarly injurious to lead.

4th. That water, hard from the presence of carbonates and chlorides, acts with peculiar rapidity upon lead.

I have therefore tried the following experiments to test these statements:

Sheet lead, and common lead piping, were exposed to the action of water containing the following solutions, with the results now to be described. In every case, the lead remained in the water for a week.

Description of Experiments.—In the first set of experiments, sheet and pipe lead were exposed to the action of a strong solution of sulphate of magnesia (grs. iv, and also grains x, to the ounce) in distilled water.

2d set. The same solution of sulphate of magnesia, combined with bicarbonate of soda (grs. iv to the ounce).

3d set. Carbonate of magnesia, partially redissolved by carbonic acid in distilled water.

4th set. Carbonate of lime, partially redissolved by carbonic acid gas in the same way.

5th set. Solution of common salt (gr. ½ to the ounce) in distilled water, and the same strength in the common spring water of Liverpool, which contains a moderate quantity of sulphate of lime.

6th set. Solutions of common salt, as above, only stronger (grs. ij in the ounce).

7th set. Solutions of common salt (gr. ½ and grs. ij in the ounce), in combination with gr. j and grs. iv of sulphate of magnesia, respectively; *i. e.* gr. ½ with grs. j, and grs. ij with grs. iv.

8th set. The same experiment, only substituting chloride of calcium for chloride of sodium.

Object of the Experiments.—It will be seen, on examining the above experiments, that nearly every point in dispute was brought under investigation; viz., the action of *hard* water, which does not contain sulphates, in experiments 3 and 4; the action of *strong* solutions of sulphates, in experiment 1; the modifying effect of the presence of excess of carbonic acid along with the sulphate, in experiment 2; the effect of chlorides of various strength, in distilled water, and in water containing small and large amounts of sulphates of both lime and magnesia, in experiments 5, 6, and 7; the difference in the effect of chlorides of equal strength, dependent upon difference in the base with which the chlorine is combined; and, lastly, the difference in the effect produced upon sheet lead, and common pipe lead.

Results—Different kinds of Lead.—The difference between the effect upon the sheet and the pipe lead was so slight in every case as scarcely to merit notice; if anything, the pipe lead was the least affected, as shown by the visible effect of sulphuretted hydrogen, for quantitative analysis was not resorted to in any instance. When, however, tea lead was operated upon, the difference was very great, which corresponds with results I obtained many years since, in which I found that, whilst the deposit from pure lead in a certain time weighed 5.5 grains, that from an equal surface of tea lead, placed under precisely similar circumstances, weighed 11.5 grains.

This result might almost be anticipated, as impurity in common pipe lead is more likely to be zinc than any other metal, and this would retard rather than hasten the action of the water upon the lead, by forming a galvanic arrangement; whilst the tin which is stated to be present in tea lead would hasten the action upon the lead, as it is less easily acted upon by chemical agents than lead itself. The difference in effect of the different strengths of the same solution was by no means strongly marked, the result being so nearly the same at the end of the week's trial, that it is unnecessary to make any distinction, in speaking of them, between the solution of four grains of sulphate of magnesia, and that of ten grains; between the half grain and the two grains solution of chloride of calcium, &c.

Sulphates.—The solution of sulphate of magnesia produced a very decided effect; the bottom of the jar in which the experiment was made became covered with a thick white layer, and a coating, similar in appearance, covered the surface of the lead, but was removed without difficulty by gentle scraping with the nail: on transmitting sulphuretted hydrogen, the white sediment became a black powder, and the water assumed a brown hue. Thus it was clear that the strong solution of the sulphate did not form a protecting layer upon the lead, though repeated experiments, year by year, shown to my class of chemical students, have confirmed beyond dispute that the Liverpool water, which contains a small quantity of sulphate of lime, does protect it. It appears to me that the difference in the effect of a strong and a weak solution of a sulphate is owing to the rapidity with which the precipitate is formed by the first, which prevents its adhering firmly, while in the second it is formed so slowly that its adhesion is uniform and perfect.

Carbonates.—All the carbonates acted upon the lead so far as to cause the water to become decidedly coloured by the sulphuretted hydrogen; and a dark-coloured deposit was formed amongst the superfluous carbonate of lime and magnesia. The effect from the bicarbonate of soda was the most decided, and this, notwithstanding the presence of a small quantity of sulphate of lime in the common spring water, and a large quantity of sulphate of magnesia in the distilled water; whence it is evident that neither a large nor a small quantity of a sulphate acts as a protection in the presence of a soluble carbonate.

Chlorides.—In every case the water became brown on the transmission of the sulphuretted hydrogen, but the solution of chloride of calcium was by far the most affected, and a decided coating was formed upon the lead in it, which was not the case in any of the solutions of common salt, in which the lead retained its ordinary appearance, and no precipitate was found upon the bottom of the jars. The effect of the chlorides was, therefore, less marked than that of the other solutions employed.

Conclusions.—From the above experiments, it is clear that hard waters do not protect lead, simply from the fact of their being hard, but that the protection, when effected, is dependent not only upon the nature of the salt causing the hardness, but also upon the proportion present; for, whilst all experience proves that a small amount of a sulphate, at any rate of a sulphate of lime, does protect the lead, a large quantity of sulphate of magnesia acted considerably upon it.

It appears, also, to be proved that chlorides act upon lead, whether with or without the presence of sulphates, but that their action is not so great as that of soluble carbonates, which produce a rapidly injurious effect upon the metal. At the same time, these results do not practically affect the question of the safety of using lead for common water, so far as sulphates, at any rate, are concerned; inasmuch as the solutions here employed were, out of all proportion, stronger than any ordinary spring water, and the experience of years has proved that there are no bad consequences practically occasioned by the employment of this metal for water containing sulphates.—*London Med. Gaz.*, June 1851.

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59. *Professor Faraday on Schönbein's Ozone.*—Professor FARADAY, in a lecture delivered before the Royal Institution, June 13th, 1851, commenced by stating that considerable mystery was attached to the subject which he proposed to bring before the members on the present occasion, namely, *Ozone.*[*] This name had been given by Schönbein, of Basle, to a substance or condition of matter which manifested itself under very peculiar and widely different circumstances. Schönbein regarded it as an independent body, and a constituent of the atmosphere; but in his (Professor Faraday's) opinion, it was nothing more than an allotropic condition of oxygen. It was never manifested except where oxygen was present, and where, at the same time, water, in a liquid or vaporous condition, was found. No substance had ever been separated from the atmosphere where ozone existed; but its presence was manifested, not merely by the strong smell peculiar to it, but by certain well-marked chemical properties which the atmosphere containing it possessed.

When electricity is produced from a powerful machine, and allowed to be discharged by a point, there is a feeling of a current or aura as of vapour escaping, and, at the same time, a remarkable odour. If, during the passage of the electricity, a piece of paper, moistened with a solution of iodide of potassium and starch, be brought near, the discharge causes the production of blue iodide of farina. The blue colour thus produced is the result of the oxidation

[*] Probably derived from ’οζώδης, "having a strong smell."

of the potassium by the *ozone*, and the setting free of the iodine. This is one of the best tests for the presence of ozone. It was formerly supposed that nitric acid was produced by the discharge of the spark, and that the decomposition of the iodide was occasioned by this acid as a result of the union of oxygen with nitrogen in the air: but this theory will not account for the smell and other properties of this extraordinary agent.

Schönbein produces ozone in very large quantities by introducing into capacious bottles, with glass stoppers, pieces of cut and cleanly scraped phosphorus, with a small quantity of water, so that the phosphorus may be partly in and partly out of the liquid. A vapour slowly rises in a current. After ten or twelve minutes the ozone is produced, and may be procured in a mixture with oxygen and nitrogen by removing the phosphorus at a water-bath, and thoroughly washing the interior of the bottle with water, in which ozone is insoluble. This body is thus separated from the vapour of phosphorus and phosphorous acid. (This experiment was performed in three bottles, and several bottles of ozone previously prepared were now brought forward.) On introducing paper, wetted with starch and iodide of potassium, into one of the bottles, there was an immediate indication of the presence of this principle, by the production of a dark blue iodide of starch. Another remarkable property possessed by ozone was seen in its bleaching powers. Some ounces of a solution of sulphate of indigo were gradually poured into a bottle containing ozone, and shaken, when the colour was as completely destroyed as if chlorine or chloride of lime had been present. A very small quantity of ozone would thus entirely discharge the colour of a very large quantity of sulphate of indigo.

It has been already stated to be so little soluble in water, that a bottle containing it may be repeatedly rinsed with water without losing its ozonic contents. If, however, the stopper be removed, and it is exposed to air, it soon passes off. Ozone appears to be entirely destroyed by heat; or, at any rate, its production by electricity ceases when sparks are received from a red-hot metallic point. This fact was ingeniously illustrated by insulating a small galvanic battery, capable of raising at pleasure a platina ball to full redness: the battery was made part of the machine, and the platina ball the terminal point from which the discharges of electricity were received. The machine was set to work, and it was clearly and distinctly proved by Professor Faraday that the discharges from the red-hot platina ball produced neither the aura, the smell, nor the decomposing effects on iodide of potassium and starch, which were immediately manifested when the ball was allowed to cool, and the electric fluid was then passed through it.

The oxidizing properties of ozone are indicated upon metals which in practice it is rather difficult to convert to oxides—namely, silver. A piece of polished silver had been placed in a bottle of ozone for several hours, and had acquired a distinctly brown tarnish, not from sulphur, but from a process of ozonation, or, in other words, oxidation. Polished lead similarly treated was also oxidized. Ozone had always a tendency to bring metals and metallic oxides to their highest degree of oxidation. In this respect it was the most powerful oxidizer that was known. A tube containing several rings of metallic arsenic had been placed for a short time in a bottle of ozone. The metal had entirely disappeared, and had become transformed into arsenic acid. Paper wetted with a solution of proto-sulphate of manganese was introduced into a bottle of freshly prepared ozone, and in the course of a short time black spots appeared over the surface, proving that the manganese had passed to a higher degree of oxidation.

Nitrogen and sulphur are easily oxidized by it. Schönbein succeeded in procuring a quantity of nitre (of which a crystallized specimen was shown) by the agency of ozone in contact with nitrogen (of air) and potash. Sulphur was also converted to sulphuric acid. Paper stained with sulphuret of lead was immediately bleached when exposed to an ozonic atmosphere. Some curious experiments of Schönbein's were now shown, in which portraits and inscriptions were seen in white letters on a dark ground, as a result of placing stencilled metallic plates on paper which had been stained brown by sulphuret of lead. The uncovered spaces had been exposed to light and air, or *insolated*.

The result was that in these spots the sulphuret of lead had entirely disappeared, having been converted to colourless sulphate of lead by the oxidizing action of ozone.

The alleged bleaching properties of solar light on coloured articles are thus probably due to the agency of ozone—in other words, to a process of oxidation and alteration of the colour.*

Sulphuretted hydrogen, phosphuretted hydrogen, and all foul effluvia, are speedily oxidized and destroyed by ozone. It is, therefore, the great purifier of the air; and, owing to its continual exhaustion by oxidating processes, it is difficult to discover the presence of ozone in large and populous places, or in close and crowded dwellings. In the open air of the country, and on the sea, it constantly exists in a proportion which is probably subject to great variation, although ruled by laws which are at present unknown. Schönbein had contrived an *Ozonometer* for testing the amount contained in air. It is prepared by immersing paper in a solution made of one grain of iodide of potassium, ten grains of starch, and two hundred grains of water. The paper is dried, and, when intended for use, is exposed for some time to the air. There is no change until it is wetted with water, when, if ozone was present in air to which it had been exposed, a blue colour will appear, the intensity of which varies according to the quantity of ozone present and the length of exposure. The ozonometer consists of a series of papers thus coloured in different degrees, and bears some analogy to the cyanometer long since proposed by Humboldt.

Professor Faraday stated that, during the last autumn, when at Brighton, while walking close to the sea-shore, he exposed some strips of this prepared paper to the current of air coming over the sea, and, on subsequently wetting the paper, the presence of ozone was distinctly manifested by the blue colour produced. On another occasion he received on the same paper the current of air blowing over the town, but no trace of ozone could be detected in it. When he went, however, on the windward side of Brighton, so as to catch the air blowing over the downs before it reached the town, ozone was strongly manifested by the result. It was thus established that in populous places there is a constant consumption of this principle.

It had been shown that ozone was evolved with the ordinary electricity of the machine: it was now proved that the current of the battery equally leads to its production. Water was decomposed by a Grove's battery, and the oxygen and hydrogen evolved were conducted through a tube in which cotton soaked in potash had been placed to arrest any traces of acid. The gases evolved at the end of the tube decomposed the iodide of potassium on starch paper, and gave the usual indication of the presence of ozone.

Ozone is evolved in numerous chemical processes. If pure ether, mixed with water, be introduced into a wide-mouthed capacious bottle, and the vapour allowed to become diffused, it will be found that litmus paper introduced is not reddened, and that starch paper prepared with iodide of potassium is not rendered blue. If, however, a glass rod be made hot in the flame of a spirit-lamp, and then introduced into the vapour of the bottle,. litmus paper held above the rod becomes strongly reddened, and the iodide of potassium paper intensely blue. In the oxidation of ether vapour at a low temperature, ozone is evolved.

Ether, in its ordinary state, has no bleaching properties; but the ether thus treated had acquired the power of discharging the colour from a large quantity of sulphate of indigo.

Essential oils are thickened by long exposure to light and air; they become ozonized and their properties changed. This was illustrated by reference to oil of turpentine. Freshly rectified and pure oil of turpentine was proved, by admixture with sulphate of indigo, to have no bleaching power. A small quantity of oil, which had been exposed to air and light (the air in a bottle half full), destroyed the colour in a few minutes, like chlorine.

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* This hypothesis should have its correctness tested by the exposure of colours known to fade, in hermetically sealed tubes. Oils, it is well known, are bleached in close bottles; but they may contain air, and wherever there is air there is ozone, a very small proportion of which possesses remarkable powers of bleaching.

We cannot doubt that ozone exerts an important influence on the atmosphere, and, therefore, on the health of animals and vegetables. Schönbein, who is rather sanguine in his views, considers, from the irritant properties of ozone, that an undue proportion of it in air may give rise to epidemic influenza, bronchitis, and other affections of the air passages; and, in making experiments at Basle, he found that, concurrently with the prevalence of these disorders, ozone was very abundant in the air. On the other hand, it has been said that its deficiency in air will account for cholera or fevers, since the foul effluvia or miasmata giving rise to these diseases are not completely destroyed or removed by the oxidizing action of ozone. These, of course, are mere speculations, insusceptible of proof; but, in the mean time, it must be conceded that the subject opens a new road to experiment and observation, and that very important results may be obtained by following out Schönbein's researches.

[It would be difficult to describe the intense interest which this lecture excited in a large and crowded auditory. The illustrative experiments were most ingeniously contrived, and were remarkable for their novelty. The conclusions of the lecturer were fully justified by the results.

We think Mr. Faraday has afforded the right explanation in assigning the properties of ozone to an allotropic condition of oxygen. This extraordinary element, which forms by weight one-fifth of the atmosphere, eight-ninths of water, and one-half of the solid crust of the earth, may, like other supposed elements, be capable of existing in two states (allotropic) so widely differing from each other as to possess nothing in common excepting the name. Phosphorus presents this allotropic condition: in its ordinary state it is colourless, luminous in air in the dark, forming a deliquescent acid, is soluble in bisulphuret of carbon, and melts and burns at a very low temperature, about 108°. If phosphorus be kept for a time at a temperature between 464° and 482°, its properties are entirely changed: it acquires a brownish-red colour on cooling; it requires a high temperature for combustion; so that, unlike common phosphorus, it may be safely handled and carried in the pocket: it does not deliquesce in moist air, and is quite insoluble in bisulphuret of carbon. Liebig states that, while common phosphorus is poisonous, the altered phosphorus has no action on dogs. At a low red heat, the altered phosphorus is reconverted to and reacquires all the properties of ordinary phosphorus! There is, therefore, no apparent change of matter, but merely a change of state.

Thus Mr. Faraday considers that oxygen bears the same relation to ozone that ordinary does to altered phosphorus; that they may, under certain conditions, pass and repass into each other: but what those conditions are which produce and *regulate* the conversion of oxygen into ozone in the atmosphere it is impossible to say. Chemical agency, electricity, and magnetism may be the constant sources of production. Decay, disease, and death, affecting alike animals and plants, may be the means by which ozone or allotropic oxygen is consumed; but what power is it that *regulates* the quantity produced, and so adjusts it that it shall conduce to health and life? This is a profound mystery. It is obvious, from what is already known, that by an over-conversion of oxygen in the atmosphere into this allotropic condition, every living being would perish; and it is not improbable that the arterialization of blood may be due, not to oxygen in its ordinary, but in its allotropic state. It is commonly said that oxygen is absorbed as such, and the red corpuscles of blood are regarded as oxygen-carriers; but the researches of Schönbein open a new path of research for physiologists.

It has been a mystery whence those sulphates and nitrates are derived which are frequently found in freshly collected rain water that has only washed the atmosphere. Ozone may be the agent by which the sulphur-gases and ammonia that are diffused in the atmosphere become oxidized and transformed to acids and salts. Acid springs, which are found in some parts of the world, and the great nitre beds of Ceylon, and on the coast of Peru, may owe their origin to this allotropic influence in past ages, and still working slowly at the present time. Although ozone does not appear to be dissolved by water, it is a question whether the oxygen in that liquid may not assume an ozonic condition, and thus account for the rapid conversion of nitrogen, sulphur, and phosphorus, or the compounds containing them, to nitrates, sulphates, and phosphates. Every chemist knows the rapidity with which sulphuretted hydrogen is decomposed in all kinds of water exposed to air: sulphur is precipitated, or, if a base be present, acidified, and a salt formed. Oxygen, therefore, either in its ordinary or allotropic state, is the great purifier of air and water.

Oxygen in combination may be frequently in the ozonic state, or may become so during its evolution. Chromic acid not only bleaches, but sets free, iodine from iodide of potassium. Peroxide of hydrogen and other hyperoxides have a similar action. Chlorine and bromine resemble ozone in their bleaching powers, and in their action on iodide of potassium. The bleaching is commonly referred to *nascent* oxygen, because dry chlorine has no such effect; but for the term nascent we may now, perhaps, be justified in substituting the word *allotropic*, and refer the effects to the ozonic condition of oxygen.

The oxidation of the metallic sulphurets by ozone throws a curious light on the probable cause of the destruction of photographic drawings. If any sulphuret of silver be left in the finished drawing, the drawing is slowly bleached, and the sulphuret converted into sulphate of silver. In drawings which have been framed, the change is observed to commence on the internal margin, and slowly spread to the centre. There are many other remarkable chemical changes which will now probably receive a more satisfactory explanation than has been hitherto assigned to them.]—*London Med. Gaz.*, June 1851.

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60. *On some Pathological Effects produced by Atmospherical Electricity.* By Prof. SCHÖNBEIN. ("Proceedings" of Royal Med. Chirurg. Soc., June 24, 1851.)

After referring to the more obvious effects of electricity upon the organs of sensation, and more especially those of smell and taste, and stating his belief that the peculiar odour observed when an electrical discharge takes place, or in the neighbourhood of points from which electricity is passing, is not due to the electricity itself, but caused by the presence of a peculiar matter which he has named ozône, the author proceeded to lay before us the opinions held respecting it—viz., that either pure or atmospheric oxygen, when exposed to the action of electricity, is transformed into this odoriferous body, which he was at first inclined to consider a peculiar peroxide of hydrogen, but which other eminent chemists believe to be merely an allotropic modification of oxygen. With reference to its exact composition, he declines, however, to give a decided opinion. This body, whatever its actual nature may be, is a most powerful oxidizing agent, at ordinary temperatures, oxidizing silver, forming iodic acid from iodine, nitric acid from nitrogen; converting the acids ending in *ous* into those which end in *ic*, the salts which terminate in *ite* into those which end in *ate;* metallic sulphurets into sulphates. It decomposes the gaseous components of hydrogen, with sulphur, selenium, phosphorus, iodine, arsenic, and antimony, and exerts many other energetic chemical actions both on organic and inorganic substances. It has a strong electro-motive power similar to that of chlorine, brómine, and iodine; and lastly, it has certain physiological effects upon the animal system, similar to those of chlorine and bromine, acting powerfully as a poison, even in minute doses. Ozone is being constantly generated in the atmosphere by the electrical action going on. When in excess, it has a sensible effect upon the mucous membranes of those exposed to its influence, and its presence is indicated by starch containing the iodide of potassium being turned blue. The author has availed himself of this fact in the construction of his ozonometer, which consists of a box containing test-paper thus prepared, and a chromatic scale. He believes that certain catarrhal affections are produced by the presence of ozone in the atmosphere, and he has availed himself of the assistance of medical friends in ascertaining the co-existence of unusual prevalence of catarrh with what he terms his *blue days*, and he suggests that more extended observations are desirable for this purpose. The author then referred to the existence of poisonous miasmata in the atmosphere, which are generated by certain "purely chemical, or physical, or physiologically chemical actions," which take place within the earth, or its surface, in stagnant or running waters, or in the atmosphere itself. Of these poisonous gases or vapours, there are two sorts which are antagonistic to and destroy each other. Of the first class, sulphuretted, and perhaps phosphuretted, hydrogen, alone are produced by natural causes, and these in such minute quantities that they do not, except in a few localities, exert any general influence upon animal life. Of the second class, there is one, namely ozone, which exists in appreciable quantities in the atmosphere. But the abundant source of gaseous matters is that which the decomposition of vegetable and animal substances affords. Some of these are well known, such as carbonic acid and ammonia; others are of unknown chemical nature, and though the absolute quantity of such deleterious matters may be small in comparison to the immense volume of the atmosphere, their accumulation would render the air unfit for the support of animal life, unless some agent were at work to neutralize or decompose them. The author states that the purification of the atmosphere which we attempt to effect on a small scale by chlorine fumigations, is accomplished in the great processes of nature by the agency of ozone, a task for which it is peculiarly fitted by its high oxidizing powers. He gives the details of some experiments upon air tainted by putrid flesh, which was purified by ozone disengaged by the action of moistened phosphorus. Ozone, which is formed in the atmosphere by the electrical discharges constantly going on, acts upon and decomposes the oxidizable miasmatic gaseous matters which contaminate it, and thus the atmosphere is preserved in a state fit for the support of animal life, and, at the same time, the ozone, which, if allowed to accumulate, would become deleterious, is in its turn neutralized or decomposed by the miasmata. During a thunder-storm large quantities of ozone are formed, and the author supposes that the unhealthy state of the atmosphere which exists in the hot season of the year may be caused by the accumulation of miasmata produced by animal decomposition; and that it is by the generation of ozone that thunder-storms purify the air. The author considers that there are probably certain states of the atmosphere in which the quantity of ozone does not bear a due proportion to the miasmata it has to act upon, and that under such circumstances it is that certain diseases—cholera, for instance—make their appearance. He is also of opinion that, in the winter, there is more atmospheric ozone than in summer, and that the higher strata of the atmosphere contain more than the lower; and as the generation of some diseases, such as the yellow fever, appears to be connected with certain seasons and geographical positions, he thinks that by an extended series of observations it might be ascertained whether these diseases bear any relation to the ozoniferous state of that portion of the atmosphere where they happen to occur. The paper concludes with a reference to experiments which prove that ozone produced by the action of electricity or by the agency of phosphorus is identical.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Wills' Hospital—Service of Dr. Littel—*Cases discharged from April 1st to July 1st,* 1851.

	Cured.	Relieved.
Acute conjunctivitis,	1	0
Chronic do.	3	0
Catarrhal do.	5	0
Strumous do.	9	0
Granular do.	12	1
Iritis,	9	0
Cataract,	1	0
Partial amaurosis,	3	2
Opacity of the cornea,	1	1
Ulcer of the cornea,	3	0
Corneitis,	3	0
Ophthalmia tarsi,	3	1
Injury of the eye,	1	0
Closure of the pupil—operation deferred.		
Adhesion of the lid,	0	1
Coxalgia,	0	1

Wills' Hospital Dispensary—cases treated:—

Acute conjunctivitis,	8	Tumour of the lids,	5
Chronic do.	21	Injury of the eye,	13
Strumous do.	26	Entropium,	3
Catarrhal do.	4	Partial amaurosis,	17
Granular do.	13	Fungus hæmatodes,	1
Purulent do.	2	Closure of the pupil,	2
Phlyctenular ophthalmia,	12	Neuralgia of the eye,	3
Pustular do.	5	Inflammation of lachrymal sac,	4
Rheumatic ophthalmia,	3	Obstruction of do	3
Ophthalmia tarsi,	14	Fistula lachrymalis,	1
Ulcer of the cornea,	13	Ptosis,	1
Particles of steel in cornea,	5	Pterygium,	3
Opacity of cornea,	9	Corneitis,	3
Cataract,	4	Staphyloma,	3
Iritis,	9	Diseases not ophthalmic,	9
		Total,	219

Constitutional Treatment.—In the management of *all* forms of ophthalmic disease, Dr. Littell makes it a primary object to attend to the general health of the patients, but especially in the management of the various forms of strumous ophthalmia, and bad cases of granular conjunctivitis. He proceeds, first of all, to restore to a healthy activity all disordered functions, and this accomplished, he endeavours in strumous subjects to change the diathesis, and invigorate the system by free exercise in the open air, by a simple and nutritious diet, by the judicious use of the bath and by tonics, quinine and iron being preferred in most cases. In the treatment of those obstinate and intractable cases of chronic granular conjunctivitis, of which there are always so many in this hospital, he deems it all important to improve the general health and sustain the strength, while at the same time he employs such local astringent applications as are best adapted to each particular case, preferring, in using the nitrate of silver, generally the weaker solutions applied carefully to the inverted lids with a camel's hair pencil. The tonic which he prefers is quinine in connection with a generous diet and a moderate exercise in the grounds attached to the hospital, when the conditions of the eyes do not forbid too great an exposure to the light. (These patients are always exposed to as much light as they can bear without causing pain or irritation in the eye.) The cod-liver oil, so much used recently in the hospital, to correct the strumous diathesis and to improve the constitutional vigour in bad cases of granular lids, is not a favourite with Dr. L. He entertains the opinion that the results ascribed to this remedy are due to other causes—the discontinuance of irritating applications, the addition of a highly nutritive article to the ordinary meagre diet of a hospital, the season of the year, &c. &c.—and can be more readily obtained by less nauseous agents.

Iritis.—An unusual number of cases of iritis were treated in the hospital during this service of Dr. L. In the majority of the cases, the disease yielded readily to the usual plan of treatment, and when the cases came under treatment before the results of the disease had taken place, no permanent injury in any instance resulted to the eye. A few of the cases treated did not yield readily to the mercurial impression, and were only relieved after a protracted course of treatment, during which time other less efficient remedies were used as adjuvants to mercurials; the ultimate results in these more difficult cases were entirely satisfactory. It should be remarked here that it is an invariable rule in this hospital to keep the ext. of belladonna constantly painted on the brow and lids during the treatment of iritis, to obviate, if possible, a closure of the pupil. In the use of mercurials in the treatment of iritis, Dr. L. is extremely cautious; he finds that he can procure all the good effects of this essential remedy, while at the same time he avoids those injuries so often inflicted upon the constitution by its too free and indiscriminate use. He also finds that a careful perseverance in the use of mercurials, for a long time after active disease has subsided and left the pupil blocked up with lymph, does far more than is generally supposed to obviate the results of the iritic inflammation, and restore vision. This fact has been well illustrated recently in the hospital, in the person of a young married woman who was admitted in January last for the relief of the results of a syphilitic iritis which had run its course. When she came in, she was entirely blind, and in a miserably broken-down condition of the general health, and covered also with a syphilitic eruption. Dr. Parrish, who was then on service at the hospital, put her upon the use of the iodide of mercury, one grain three times daily, in combination with guaiac and lactucarium; this, in connection with a full tonic course, was continued for months, when the gums became a little swollen; as they did but two or three times, the mercurial was suspended for a day or two, and then resumed again. Her improvement was slow, but constant; the eruption faded, and the lymph gradually thinned away from the contracted pupil, and in February she could find her way about the ward; in March, she could distinguish objects without much difficulty, and in April she could see to read large print. In June, when discharged, the pupil of the right eye was quite clear, and as large as that of a healthy eye in a good light. The left eye did not improve much; it is quite soft and flabby, and probably its internal tissues are in part disorganized.

Artificial Pupil.—Peter McCarty, an Irish labourer, æt. 30, of good constitution and fine health, was admitted to the hospital on the 10th of May last. One eye had been entirely destroyed and the other rendered sightless by an attack of inflammation which he suffered in the city of New Orleans. When he presented himself for admission at the hospital, the eye that remained had a dense opacity in the central portion of the cornea—the margin of the cornea was entirely clear. The pupillary margin of the iris for three-fourths of its lower circumference was adherent to the opaque spot; the upper fourth remained free, and left a minute opening through which the rays of light would pass when the lid was raised with the fingers. As the margin of the lid fell below this minute pupil, he was quite blind, when the lid was not raised up with the fingers, and even then he could not see distinctly enough to enable him to walk about with safety. Three attempts had been made by a surgeon in New Orleans to make an artificial opening through the iris, but without the slightest success, and he was given over to hopeless blindness; but, not satisfied to endure so hard a fate without another trial for relief, he determined to come to Philadelphia, and consult the surgeons at this hospital. He accordingly arrived here in May last, and Dr. L., not considering his case hopeless, admitted him, and in due time submitted him to the examination of his colleagues, who, after the usual consultation, concurred in the propriety of an operation. The eye being free from irritation, and the texture of the iris presenting a healthy appearance opposite that part of the inferior portion of the cornea which was transparent, Dr. L. determined to make an opening through the iris at that point. To accomplish this object, he introduced a small iris scalpel through the tissues of the eye about one line behind the iris, and carefully carried the point through it into the anterior chamber. This was attended with extreme difficulty, as the iris lay in close contact with the cornea, and there was therefore not space for the point of the scalpel in the anterior chamber; however, after prolonged and delicate efforts, the point of the instrument was finally carried through the iris, and onward between the iris and the cornea for two-thirds the width of the iris towards the inner canthus of the eye, the cutting edge of the knife turned so as not to wound the cornea. The scalpel was then withdrawn with a gentle pressure of the cutting edge against the iris, making, as it passed out, a free incision; the divided fibres retracted immediately, leaving a triangular opening as large as could be desired. No unpleasant symptoms followed the operation, and, in a few days after, the man was up and walking about the hospital and the yard, seeing his way distinctly. As the vision has remained the same since the operation in the early part of June until now, July 21st, it is inferred that the lens and its capsule were destroyed by the abortive operations in New Orleans. This man's vision, since the time he was out of bed after the operation until now, has been sufficient to enable him to do any kind of horticultural labour with the gardener, whom he has very industriously assisted since he has been able to see and to work. This case has a peculiar interest from the circumstance of its unpromising character in the outset, and from the complete success which followed a well-devised and skillfully executed operation.

Medullary Disease of the Eye.—Two cases of this formidable disease of the eye have occurred in the Hospital Dispensary within the last two years. One has already proved fatal; the other is still under treatment. Andrew Galbrath, the patient first affected, a fine, healthy-appearing lad of six years, was brought to the hospital during the service of Dr. L., on the 9th day of April 1849, three weeks after the eye was first found to be diseased. The first defect noticed was an internal squint, and a partial failure of vision. When first presented at the hospital, the pupil was active and normal in size, but it had a brilliant appearance and amber colour. On looking through it into the interior of the eye, there was visible in the posterior part an adventitious mass of matter, consisting of thin distinct lobes, having the colour of yellowish lymph with a silvery lustre, and filling up almost one-fourth of the interior of the globe. There was still at this time a little strabismus, and some pain also in the temple and brow, with a slight redness of the conjunctiva. The pain and redness of the conjunctiva subsided after a moderate leeching, and did not again return until near the termination of the disease. The general health of the little patient seemed perfect, and continued so until the month before he died. Lugol's solution was ordered for him, gtt. v three times a day, and this he continued to take for five or six months. He was finally compelled to abandon this remedy, as the stomach would no longer tolerate it; no regular medical plan was adopted in its stead. The solution was resumed after a time, but the stomach continued to reject it, and it was finally left off entirely. While taking the solution, the disease remained stationary, and for a time seemed to recede; but, after it was abandoned, the mass in the interior of the eye began to increase slowly, pushing forward the lens against the iris, which ultimately became obliterated. In January, the mass had advanced to the cornea, and the whole globe was visibly enlarged; the sclerotica had become thinner, nodulated, and of a bluish-gray appearance. After this time the appearance of the eye underwent no further change; the cornea remained entire and transparent, and the lid was easily closed over it. In the early part of March, the general health, which had remained good, began to fail, and shortly after the vision in the other eye was lost, though the eye retained a healthy appearance, except, only, that the pupil remained dilated. Soon after this, he complained of pain in the head, became too feeble to walk about, lost his appetite, and inclined to be constantly on his back, pressing the back part of his head deep down in the pillow, moaning, and rolling from side to side; he was also wakeful, and extremely feverish and irritable. April the 1st, he had three slight convulsions, and in the evening of the same day he died. On examining the brain, a large oval tumour was found resting in the position of the chiasm of the optic nerves, involving the nerves of the diseased eye as far as the orbit, and that of the unaffected one for half that extent; posteriorly, it involved these nerves almost to the optic thalamus on the right side, and quite to it on the left; latterly and superiorly, it encroached on the anterior lobes of the cerebrum, and was greatly imbedded in them; the cerebral substance was softened where in contact with the tumour; the tumour was covered by the membranes of the brain, and probably originated in the substance of the optic nerve of the left side—the side of the diseased eye; it had a semi-solid consistence, was yellowish white and granular, and resembled tubercle when beginning to soften. The eye was not examined on account of the opposition of the parents. No disease was found in other portions of the brain.

Henry Coagan, the patient still under treatment, is seven years old, a native of the city; has a fair complexion, and a rather delicate constitution, though his general health seems good. The left eye is diseased, and presents an appearance analogous to that of the other patient's eye when first seen; the only apparent difference consists in the uniform surface of the adventitious mass, it not appearing lobulated as in the other case. The vision is lost, but there is no pain, no redness, no dilatation of the pupil as yet, and no strabismus. He was first brought to the hospital on the 23d day of April last, and has been under treatment since then; he has been brought here now four times in all; the disease has, during this time, remained perfectly stationary; he has been kept steadily on the use of Lugol's solution and the syrup of the iodide of iron, three drops of the former and ten of the latter, given three times daily in the syrup of sarsaparilla.

A. F. MACINTYRE, *Resident Surgeon.*

WILLS' HOSPITAL, *July*, 1851.

Statistics of Mortality of Baltimore, Maryland, in 1850. By L. S. JOYNES, M.D., of Accomack, Virginia. [Extracted from a letter to the Editor.]

Having already furnished you with detailed statements concerning the mortality of the city of Baltimore, during a period of fourteen years, ending with 1849 (which statement was published in the *American Journal* for October, 1850), I will seize the present opportunity to add a word in reference to the mortality for the year 1850. I am chiefly induced to do so by the fact that the decennial census taken in that year enables us to compare the mortality with the population.

The population of Baltimore, in 1850, as given in a publication, believed to be authentic, was as follows:—

White population		141,440
Free coloured "	24,668	27,614
Slave "	2,946	
Total		169,054

Thus it appears that the total population, in the decennial period 1840–50, increased very nearly sixty-five per cent.; the increase of the white population was but little less than seventy-four per cent., and that of the black population nearly thirty per cent.

The mortality for the year 1850, as given in the Annual Report of the Board of Health, was in the

White population		3,725
Free coloured "	641	900
Slave "	259	
Total		4,625

Excluding the still-born (415 in number), the deaths amounted to 4,210.

From this it is evident that, notwithstanding the vast increase of population which the census exhibits, the increase of mortality has been still greater. The deaths in 1850 are more than double the number of those in 1840, and by referring to the tables contained in my paper above referred to, it will be found that this disproportionate mortality was already remarkable in the year 1849, and one or two years preceding. Consequently, the *ratio of mortality to the population*, which I formerly gave, does not hold good for these more fatal years. The ratio for 1850 (excluding the still-born) was 1 in 40.13 of the general population; whereas, in 1840, it was 1 in 50.13; and for the nine years 1836–44, as determined by calculation, 1 in 45.42.

The causes of this excess become evident on referring to the detailed statement of the causes of death, given in the Reports of the Board of Health. I have no design at present to trouble you with the details of the tables for

1850, but will merely state that the deaths from *diseases of the bowels* of the *zymotic class* exceed those of any former years, at least since the beginning of the period which I have made the subject of investigation. The total number of deaths from these diseases—cholera morbus, cholera infantum, diarrhœa, and dysentery—was 651. The only preceding year in which their fatality at all approaches this high number was 1849, when the aggregate was 539. In 1848, the next most fatal year from these diseases, it was but 314. The increased fatality of dysentery is especially remarkable. Thus we find that, in the thirteen years preceding 1849, the deaths from this disease varied from 7 to 46 annually. In 1849 they suddenly rose to 148, and in 1850 to 237. So the deaths from diarrhœa, which had never exceeded 15 in any one year, amounted to 69 in 1849, and 40 in 1850, and those from cholera morbus, of which the annual maximum had been 9, amounted in those years respectively to 32 and 27. The deaths from cholera infantum (amounting to 347 in 1850) exhibit an increase more nearly according with the annual increase of population.

The year 1850 also exhibits a great increase of deaths from *small-pox.* Since the years 1845 and 1846, when 225 persons died of that disease, comparatively few cases of the disease had occurred, the deaths in the three years following numbering 1, 4, and 19 respectively, to which may be added 5 deaths from varioloid and varicella. In 1850, the fatal cases of small-pox amounted to no less than 145, while 8 are set down to varioloid, and 3 to varicella, making 156 deaths due to this group of diseases.

If the excessive mortality from the zymotic diseases which have been mentioned was deducted from the sum total of deaths for the year 1850, it would leave the ratio of mortality for that year almost exactly the same with that which I formerly gave as the average rate for the city of Baltimore.

On Henry's Magnesia. By DAVID STEWART, M.D., of Baltimore.

The physician is frequently asked, "Why Henry's Magnesia differs from the magnesia of the shops?"

I have instituted a series of experiments, which I may hereafter publish in detail, in order to prove that one defect in many (if not all) of the magnesia that is now put up in bottles as a substitute for Henry's Magnesia, is the presence of an appreciable quantity of lime, and that the magnesia called "Apothecaries' Hall," and other varieties of English magnesia, contain a considerable proportion of lime, sometimes amounting to three per cent.

In making the comparison with Henry's, I dissolved ten grains of each sample in about half a fluidrachm of sulphuric acid (previously diluted to measure half an ounce); this solution of magnesia was poured into a test tube, and then mingled gradually with half an ounce of alcohol (35° Baumé): the beautiful needles of sulphate of lime appeared abundantly in almost every specimen, including some of the American imitations of Henry's.

I have repeated the experiments, using an excess of acetic acid as the solvent, and oxalic acid as the reagent: the precipitate formed by oxalic acid under these circumstances was well characterized as oxalate of lime under the microscope, by the beautiful octohedra deposited from the dilute *acid* solution.

I should prefer the former test, and would suggest that it should be substituted for this, under the article "Magnesia," in our National Pharmacopœia, as Henry's will deposit a *few* crystals of oxalate of lime: and it is not expected that magnesia *for medicinal purposes* should be "*chemically* pure."

DOMESTIC SUMMARY.

Experiment of introducing Cancerous Matter beneath the Integument of a Frog.—Dr. Leidy stated to the Academy of Natural Sciences that he had repeated the experiment of introducing cancerous matter beneath the integument of a frog, which was first announced to the Academy, May 6th.

The cancerous matter was a fragment of encephaloid, taken from a female after death, by Dr. Henry H. Smith. It was almost as soft as cerebral substance. Beneath the microscope it exhibited a structure of very delicate organic cells, containing numerous granules and one or two nuclei.

A portion three-fourths of an inch long, by one-fourth of an inch broad, was inserted under the skin of the back of a frog, on May 8th, 34 hours after its removal from the body of the female. This frog, still living, Dr. L. exhibited to the members, and by an incision through the integument, presented to view the fragment of cancer, which had been introduced, and which had not only formed a vascular attachment to the integument, but for one-half itself was of a fine red colour from the net-work of capillaries which had become developed within it. The fragment had not increased in size. A number of its structural cells remained unchanged, but others had broken down into granular masses.

Dr. L. observed, the experiment not only proved the independent vitality of tissues, which was generally admitted, but also rendered it exceedingly probable that cancer was inoculable, for as, in the experiments, the cancerous fragments continued to live when introduced into cold-blooded animals, they would probably not only continue to live when introduced into warm-blooded animals, but would grow or increase in size.—*Proceedings of the Academy of Natural Sciences*, Phila., June 17, 1851.

New Method of preventing Fats and Fixed Oils from becoming Rancid.—Dr. C. W. Wright, of Cincinnati, states (*Western Lancet*, Sept., 1851) that one of the early settlers of Ohio mentioned to him the following curious manner in which the Indians preserved bear's fat from becoming rancid: In the early part of winter, the fat is removed from the body of the animal and subjected to the *trying-out* process, as it is termed; that is, it is subjected to a degree of heat sufficient to coagulate and separate the azotized matter which subsides to the bottom of the vessel, and the oil is drained off. After this operation is completed, it is melted again with the bark of the slippery elm tree (*ulmus fulva*), finely divided, which may be used either in the fresh or dry state. The proportion is about one drachm of the bark to the pound of fat. When these substances are heated together for a few minutes, the bark shrinks and gradually subsides, after which the fat is strained off and put aside for use.

The bark communicates an odour to the fat that is hardly to be distinguished from that of the kernel of the hickory nut.

Thinking this might be turned to account in the preservation of the fatty matters, Dr. W. subjected many of them to experiment, and in every instance the result was alike successful. One specimen of butter (an article which, it is well known, becomes rancid sooner than any other kind of fat), prepared in this way more than a year ago, is as sweet and free from disagreeable odour as on the day it was made, having been exposed all this time to the atmosphere and changes of temperature.

Hog's lard may be preserved in the same manner.

This fact will be of much importance in the preparation of cerates and ointments, which can be thus protected from rancidity.

On a Peculiar Appearance of the Tongue in Malarial Diseases.—Dr. Thos. C. Osborne, of Erie, Ala., states (*Western Journ. Med. and Surg.*, Aug. 1851) that he has remarked an appearance of the tongue which reveals the presence of malaria in the system, in time to enable the physician to remove it before it has exerted any seriously deleterious influence.

"For several years past," he says, "my attention has been attracted to this peculiar condition of the tongue, which, from its invariable position and presence in the diseases and predispositions generated by miasma, may be appropriately denominated the *malarial margin.* As the name imports, it is an essential departure from the normal aspect of the edge, constituting a distinct lateral boundary of the tongue, occupying more or less surface according to the charge of infection in the system. Ordinarily, the colour amounts only to a very faint bluish tinge, which is liable to be lost, or merged in the various tints imparted to the tongue by various diseases. The most fixed condition of this symptom is an appearance of indentation or crimpling transversely, which is apparently confined to the subjacent tissue, while the superficial tegument is moist, smooth, and transparent. In a word, it seems to be a continuation or encroachment of the inferior surface upon the superior and lateral borders of the tongue, greater as we approach the root of that organ.

"My opportunities for noting this appearance of the tongue have been ample during several years, among a considerable population, composed of the white, black, and mixed races permanently residing upon the banks of the Warrior River (in sandy as well as the prairie regions), and in many individuals from other and different sections of this and the surrounding states; and I can truly say that in no instance has it ever failed to inform me correctly of the agency which the remote cause of fever had begun to exert in each individual case. After being once recognized, it is not easily mistaken, and from pointing it out so frequently to non-professional persons of my acquaintance, many of them have become as thoroughly convinced of its significance as myself, and call it, very properly, the "fever tongue." I have frequently, upon seeing a well-defined instance of the malarial margin, predicted fever within a month, and although the individual would be disposed to smile incredulously, and boast of excellent health, the result has generally created in their minds and bodies a different sensation.

"The fidelity of this symptom to the source of its origin is, under all circumstances, fully equal to the importance which I have attached to it. In a considerable number of cases of the different forms of dropsy, neuralgia, and inflammation, it has alone enabled me to reach a correct diagnosis, when every other symptom seemed to deny the agency of malaria in the case. Wherever seen, I have invariably assumed that there existed a tendency to intermittent disease, and upon watching the progress of the case, have as invariably detected this condition. In numerous cases of pulmonary inflammation, where the fever seemed continued, the cough unabated, the oppressive respiration persistent, and the pulse unvarying in its activity, the physical signs have designated with great accuracy the periods of repose and excitement in the course of the disease. In the gastric and intestinal phlogoses, again, whether as causes or consequences of fever, if this peculiar impression is seen upon the tongue, no apprehension need be felt in the administration of quinine, however malignant the case may appear. Here also intermission, varying in degree according to the severity of the disease, is always present, and, generally speaking, the shorter the period of repose the greater the quantity of medicine required, and *vice versâ.* I have not hesitated, in many cases, where the disease was marching rapidly to a fatal termination, to prescribe one, two, and even three drachms of sulphate of quinine at a dose, to be repeated according to the urgency of the indications. Gastro-enteritis, as a complication in the autumnal fevers of our section, is by no means uncommon. On the contrary, in the limits of my practice it exists in a majority of cases. At the present time there prevails on both sides of the Warrior an epidemic diarrhœa, as symptomatic of mucous irritation, which, in a number of instances, resists all the usual remedies given in such cases, but yields readily to repeated doses of quinine, and the daily use of the cold dash. The most active of these cases present unmistakable evidences of gastro-intestinal inflammation of a high grade; but in no instance have I failed, on a close examination, to recognize a quotidian or tertian form of intermittent, and in no instance has the malarial margin been absent from the tongue.

"My tabular report of the diseases of the last month exhibits diarrhœa as the prevailing type of disease, and by reference to that paper it will be seen that there have occurred to me twenty-five cases, in individuals varying in age from three months to sixty years; as respects the treatment, the whole number may be divided as follows, viz.:—

"Of those between the ages of three months and ten years, six required quinine and the cold bath, while five yielded to the administration of opiates and astringents; and of those over ten years, twelve demanded quinine and the cold dash, while only two yielded to opiates and astringents.

"Some of these cases were of an alarming character, and my conviction is that their favourable termination is due to the use of quinine, which I was at first led to administer by the malarial tongue. During the last four years, our country has been visited by an unquestionable form of typhoid fever, and in not one of the cases of this disease which I have seen, has the tongue exhibited the malarial border, but has appeared as if scalded in patches. But the semblance of typhoid fever is assumed by many cases of the autumnal disease, in which, but for this symptom, much apprehension might be entertained, and much valuable time lost to the physician in the treatment, for it is well known that quinine is actually injurious in all stages of the typhoid fever, while in those cases merely wearing its livery, that remedy is not only useful, but essentially necessary to the cure of the disease.

"If the malarial margin were useful only in unmasking this form of disease, its value would be inestimable; but when it points out with equal certainty all other varieties of disease in which miasma exerts a predisposing agency, it becomes a phenomenon of the greatest importance.

"It is not easy to exaggerate the value of a sign by which we detect the operation of the poison in its inception, and are conducted to the true method of suppressing it."

Femoral Aneurism cured by Compression.—Dr. H. N. Bennett, of Bethel, Ct., relates (*New York Journ. Med.*, July 1851) the following interesting case:—

"Thomas J. Elwell, a blacksmith, 30 years of age, during the winter of 1842–3, suffered from pain about the knee-joint, which he supposed to be of a rheumatic character, and applied only domestic remedies for its relief. After a walk of twenty-two miles over frozen ground, the pain and lameness of the knee increased to such a degree, that he consulted me in reference to it. Upon examination, I immediately detected a pulsating tumour in the popliteal region, nearly the size of a hen's egg, and having all the characteristics of aneurism. This was in the month of March, 1843. At the end of five or six weeks from this date, the tumour had increased considerably in size, so much, that I advised my patient to submit to ligation of the femoral artery at once, as the nature of the difficulty could not be doubtful, and as I had at that time little confidence in any other mode of treatment. Feeling unwilling to endure a surgical operation, he soon went to New York for further advice. He consulted Drs. Mott and Rogers, who both gave him the same opinion which I had done, and urged him to remain at the New-York Hospital for operation. He then passed over to Staten Island on a visit to his friends, where he consulted some physician, whose name I cannot recall, who also pronounced it a case of aneurism, but recommended him to try the effects of pressure upon the tumour. He returned home, and commenced the application of pressure, *himself*, by bandaging the limb from the toes to the knee, and placing a compress of folded cloth directly upon the pulsating tumour. He persisted in this course for two or three months without the least benefit, when he determined to substitute a firmer compress. Instead of folds of cloth, folds of *sheet-lead* formed the nucleus of his compress, which was applied in the same manner as before. I called upon him occasionally to watch the progress of his treatment, and, after the end of ten days after the application of the lead compress, I found him suffering much pain in the knee-joint, from the severe pressure which he had made, but no diminution in the size of the tumour or the force of the pulsations, the latter being readily felt through the compresses when applied with all the force which he could endure. I advised him to discontinue what I considered a hazardous proceeding, and to abbreviate his sufferings by submitting to the usual operation. Notwithstanding, being a man of very strong resolution, he determined to pursue this course still longer, and abide the issue. At this time, however, he threw aside the lead compress, and filled its place with *a ball of caoutchouc*, which he bound upon the tumour with all the force he could endure. Not long after, perhaps two or three weeks, I called again to see him, and was much surprised, upon examining the limb (which he exhibited with no little triumph), to find the tumour much diminished in size, and the *pulsation gone.* I could also distinctly feel several arteries pulsating about the knee-joint, evincing an increased development of the anastomosing branches of the femoral. From this time, the tumour in the popliteal space was gradually absorbed, and at the end of a few months had entirely disappeared."

Case of Hermaphroditism.—Dr. Jno. Neill communicated to the College of Physicians the following curious example of hermaphroditism, in a black brought to the anatomical rooms of the University of Pennsylvania:—

She dressed as a female, and was apparently twenty-five or thirty years of age, judging by her teeth and general appearance. Very little information could be obtained concerning her habits and propensities. She resided among the degraded blacks in the lower portion of the city, and died from drunkenness and exposure, according to the verdict of the coroner's jury.}

From a superficial view of the pelvis and genitals, almost any one would have pronounced the subject to have been a *hypospadic male*, notwithstanding the large mammæ and the want of hair upon the face.

The breadth of the shoulders compared with the narrowness of the hips, and the form and development of the limbs would, alone considered, have indicated the male sex.

The representative penis was five inches in length, and one inch in diameter; and the skin, prepuce, glans, corona, fossa navicularis, and orifice of the urethra presented an appearance like that of a penis. But, by lifting up or turning aside the penis, it was found that the fossa navicularis was split, and that the urethra was wanting. In the place of the urethra there was a groove reaching from the glans penis to an oblique opening in the perineum. The cuticle lining the groove was thin and shining; it was also deficient in pigmentary cells. On each side of this groove there was a fold of skin commencing near the middle of the side of the penis, and stretching around the perineal orifice. The interior of this fold showed it to be the analogue of the nymphæ or corpus spongiosum.

The perineal opening was the commencement of a passage common to the bladder and vagina, and its diameter was equal to that of a common-sized catheter, although the orifice appeared much larger, owing to its obliquity.

The scrotum existed upon one side only. It was corrugated with transverse rugæ, and covered as usual with hairs and sebaceous follicles. To the touch it gave the idea that it contained two hard bodies.

Internal Organs.—These were completely female, though not perfectly developed. The dissection was commenced by opening the abdominal cavity, and the contents of the pelvis were examined in connection with the external parts.

The bladder was natural in position and size. There was no prostate, and the urethra was about one inch in length, and opened into the perineal passage.

The uterus was small, but symmetrical; to its sides were attached the broad ligament, holding it in its proper relation to the rectum and bladder.

The Fallopian tube of the right side had no free and fimbriated extremity, but terminated in a sac which was adherent to the ovary.

The ovaries were small, spherical, and corrugated; a section exhibited the usual fibrous tissue and vesicles.

The right round ligament of the uterus was exceedingly thick, and appeared to be muscular; but, upon examination with the microscope, it was found to be composed of white and yellow fibrous tissue. It reached to the bottom of the scrotum, where it was firmly attached.

The *scrotum* contained an irreducible omental hernia, probably congenital. The hernial sac contained also a small hardened mass, which was supposed to be a representative testicle, but it contained no true glandular structure or excretory tube. The vagina was of the proper length, but extremely narrow, especially where it approached the perineal orifice.

The above case would be classified under the head of "*spurious hermaphroditism*" in the female, according to Professor Simpson's article on this subject in the *Cyclopædia of Anatomy and Physiology.*—*Quarterly Summary of Transactions*, N. S., Vol. I. No. 3.

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